



**CL*RO
feela**

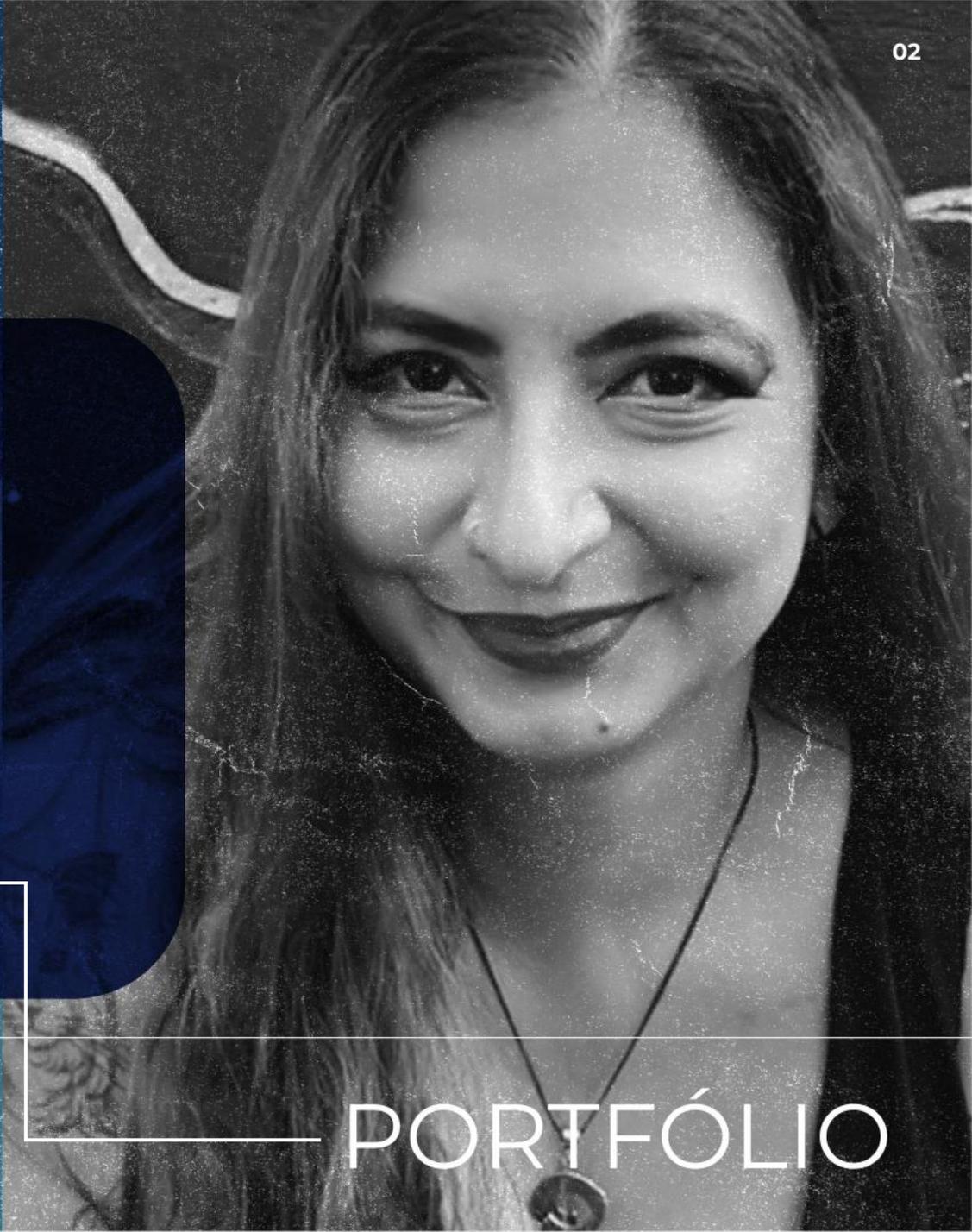
**ILUSTRAÇÃO
CIENTÍFICA
na Era Digital**

Carolina Frandsen P. Costa

[Profissional interdisciplinar, que trabalha nas intersecções entre arte, ciência e tecnologia]

- Criação de identidades visuais e sites para eventos e grupos de pesquisa
- Produção de infográficos e ilustrações científicas para divulgação e/ou publicação científica
- Clientes relevantes: Museu do Amanhã (Instituto IDG), Fundação Carlos Chagas, British Council, PROEC Unicamp, RedeComCiência, Dteach.org
- Jurada do prêmio especial 2024 (categoria Ilustração) do Jabuti Acadêmico

clorofreela.com



PORTFÓLIO

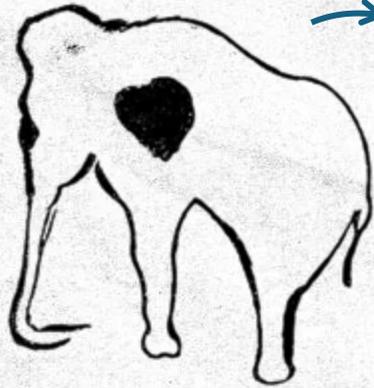
**"A ilustração científica
é a arte, ou o ofício, de
comunicar ciência
através de imagens"**

DEFININDO O QUE É ILUSTRAÇÃO CIENT.



- Decolonizing Data Viz
- Ilustrações reúnem beleza e informação para comunicar ciência, 2022.

(Leonardo Da Vinci) ←
~1510-1513



→ 15.000 A.C.
caverna de Pindal,
Espanha



Reproduzido de: Hajar R. Medical Illustration: Art in Medical Education. Heart Views : The Official Journal of the Gulf Heart Association. 2011;12(2):83-91. doi:10.4103/1995-705X.86023. Creative Commons Attribution-Noncommercial-Share Alike 3.0



Origem:

Renascimento europeu (especif. século XVI-XVII) → Ciência Moderna



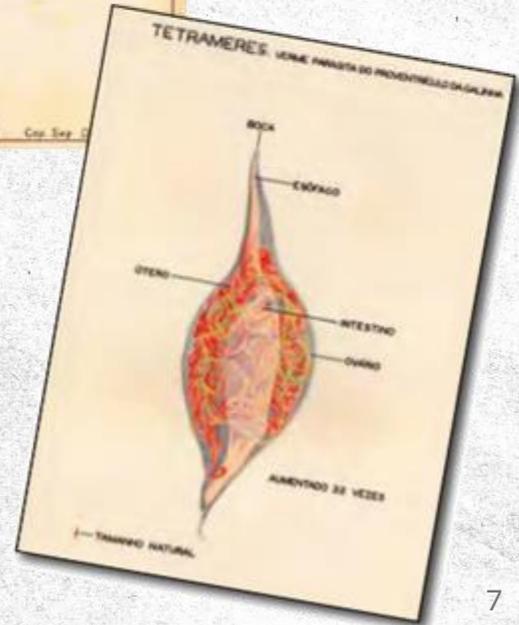
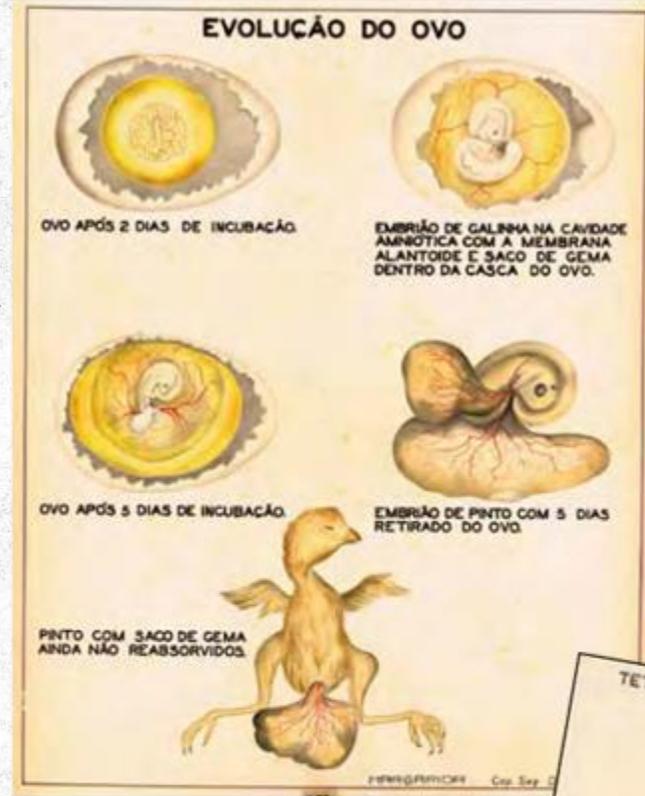
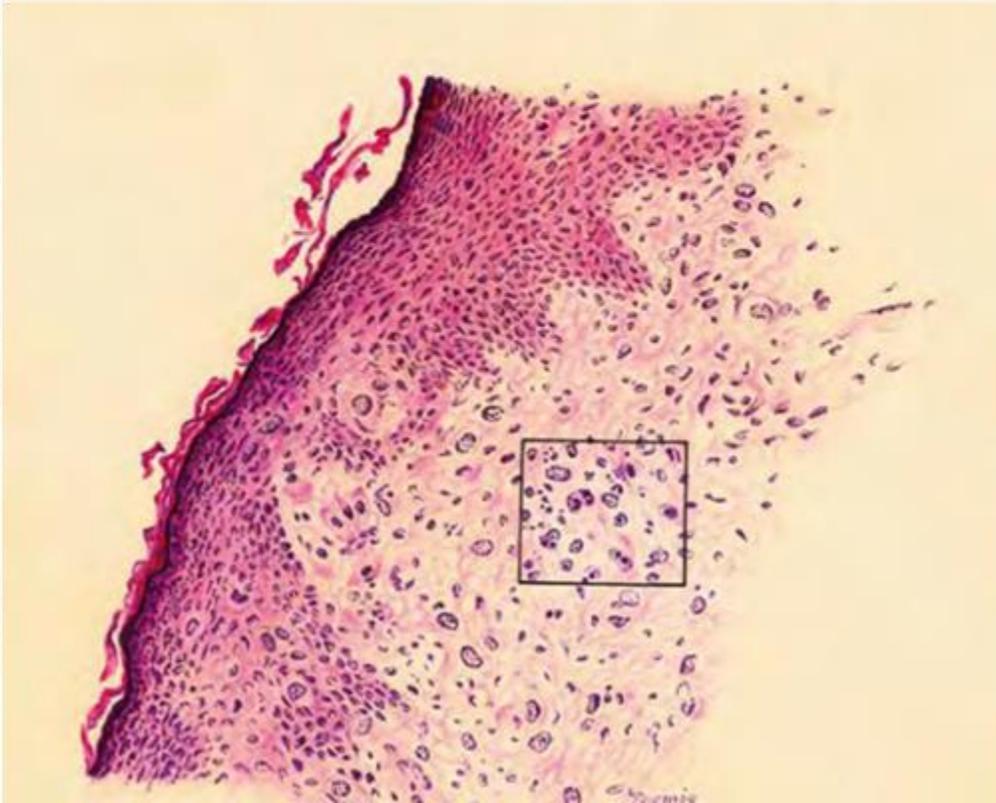
João Teodoro Descourtiz ou Jean-Theodore Descourtiz foi um médico, naturalista, pintor e desenhista francês que viveu vários anos no Brasil fazendo pesquisas geológicas, entomológicas e principalmente ornitológicas.





Nestas páginas, ilustrações de autoria de Noêmia Saggese, que constituem o terceiro maior conjunto de ilustrações originais no acervo do Museu do Instituto Biológico. Nascida em 1909, Noêmia ingressou no Instituto em 1945 e trabalhou na Seção de Desenho até 1976, ano em que foi chefe da Seção. São 175 originais, coloridos e em preto e branco, entre os quais imagens microscópicas e ilustrações que mostram patologias e sintomas em órgãos de animais.

On these pages, illustrations by Noêmia Saggese, which make up the third largest set of original illustrations in Instituto Biológico Museum's collection. Noêmia was born in 1909 and joined the Institute in 1945. She worked in the Illustration Department until 1976, when she became head of the Department. There are 175 original works, colored and black and white, among which microscopic images and illustrations that depict pathologies and symptoms in animal organs.

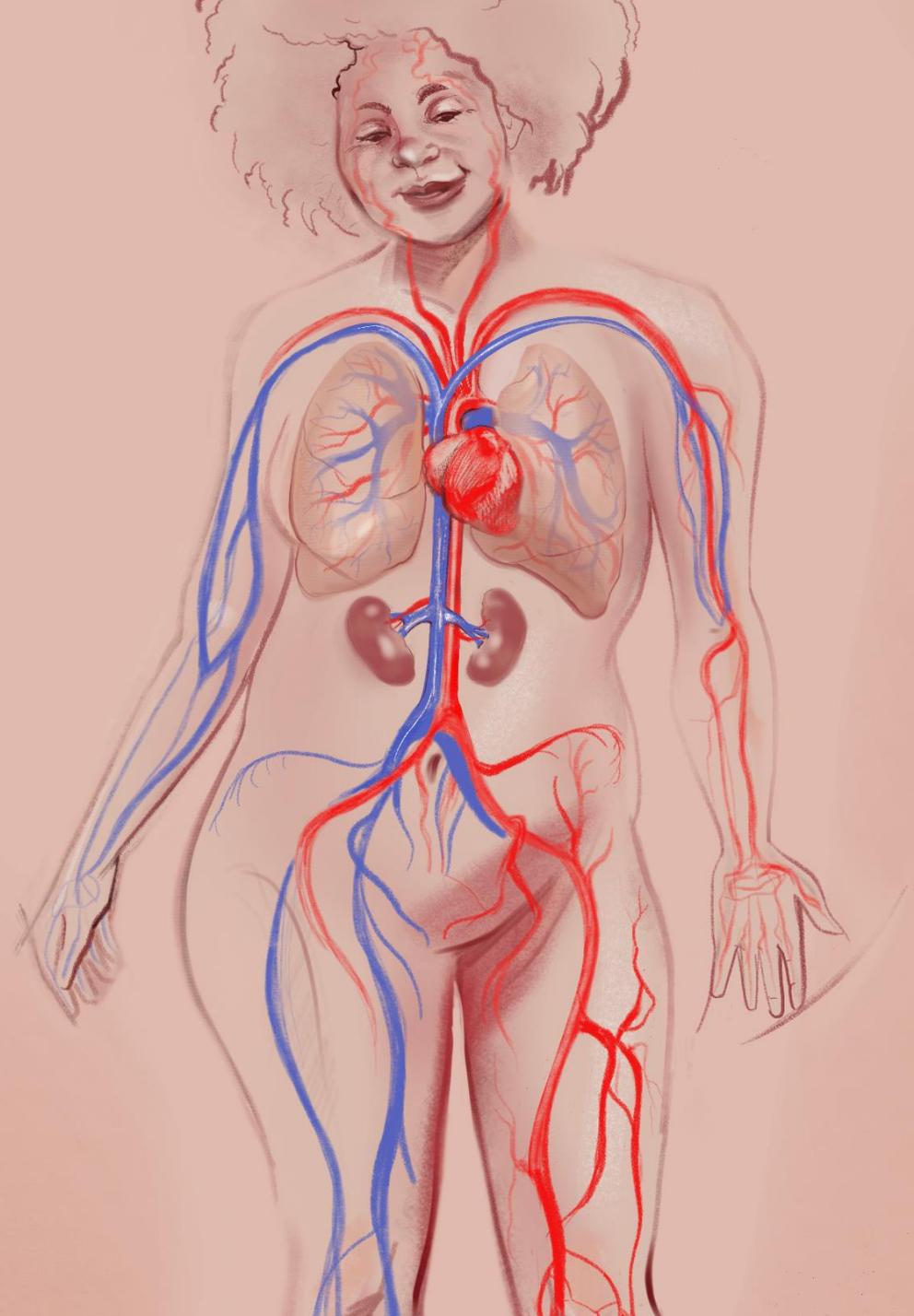


Ernestina Margarida Lima nasceu em Nepomuceno, Minas Gerais, em 1926 e ingressou no Instituto Biológico em 1944, onde se tornou desenhista.

Ernestina Margarida Lima was born in Nepomuceno, Minas Gerais, in 1926 and joined Instituto Biológico in 1944, where she became an illustrator.



a ciência busca descrever
e explicar o mundo.



DEFININDO O QUE É ILUSTRAÇÃO CIENT.

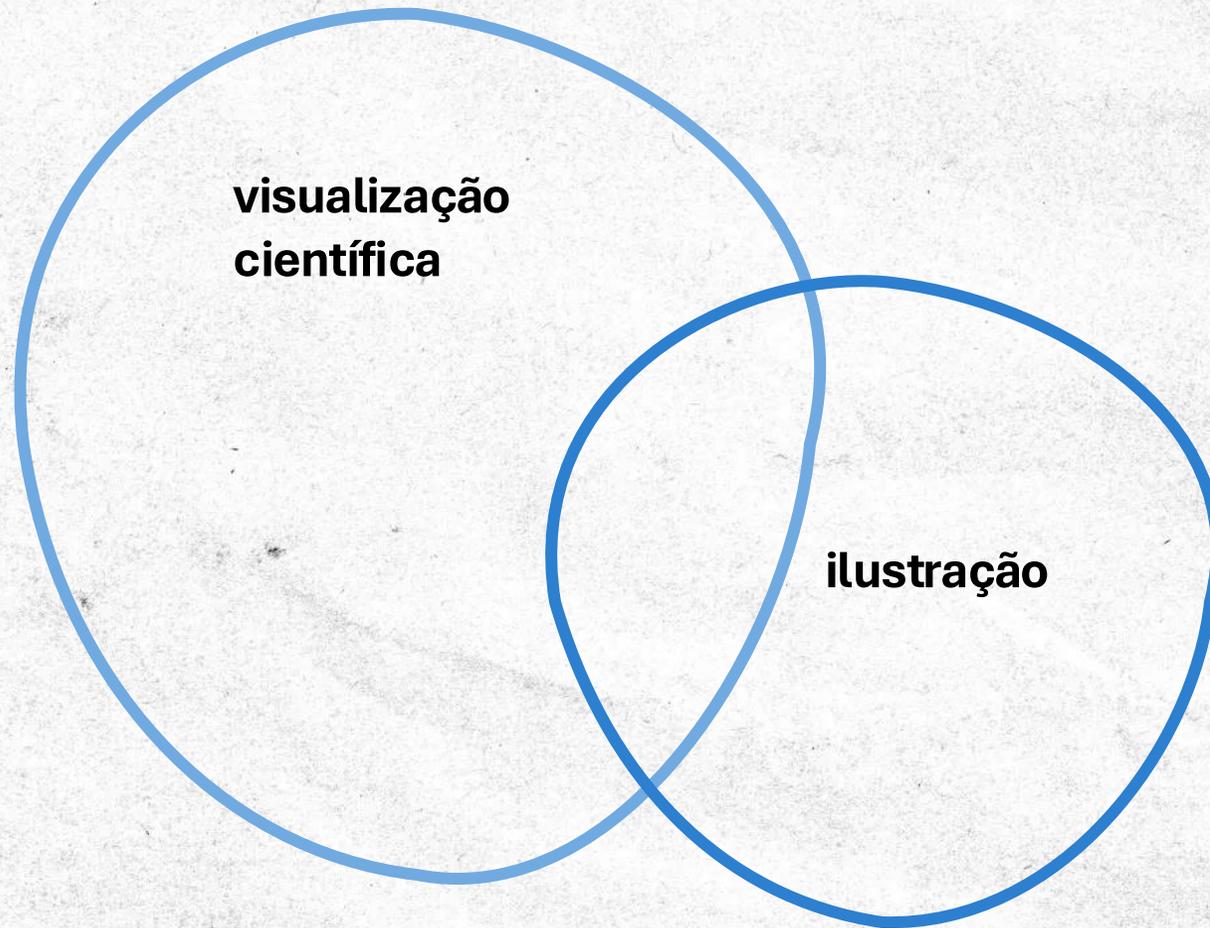
é uma área dedicada à
geração de imagens que
auxiliam seus usuários
na compreensão de
dados e processos



**visualização
científica**

inclui tudo que você
modela ou plota
(gráficos, diagramas,
fluxogramas, etc)

DEFININDO O QUE É ILUSTRAÇÃO CIENT.



**visualização
científica**

ilustração

uma imagem, desenho ou gravura que acompanha ou não um texto.

DEFININDO O QUE É ILUSTRAÇÃO CIENT.

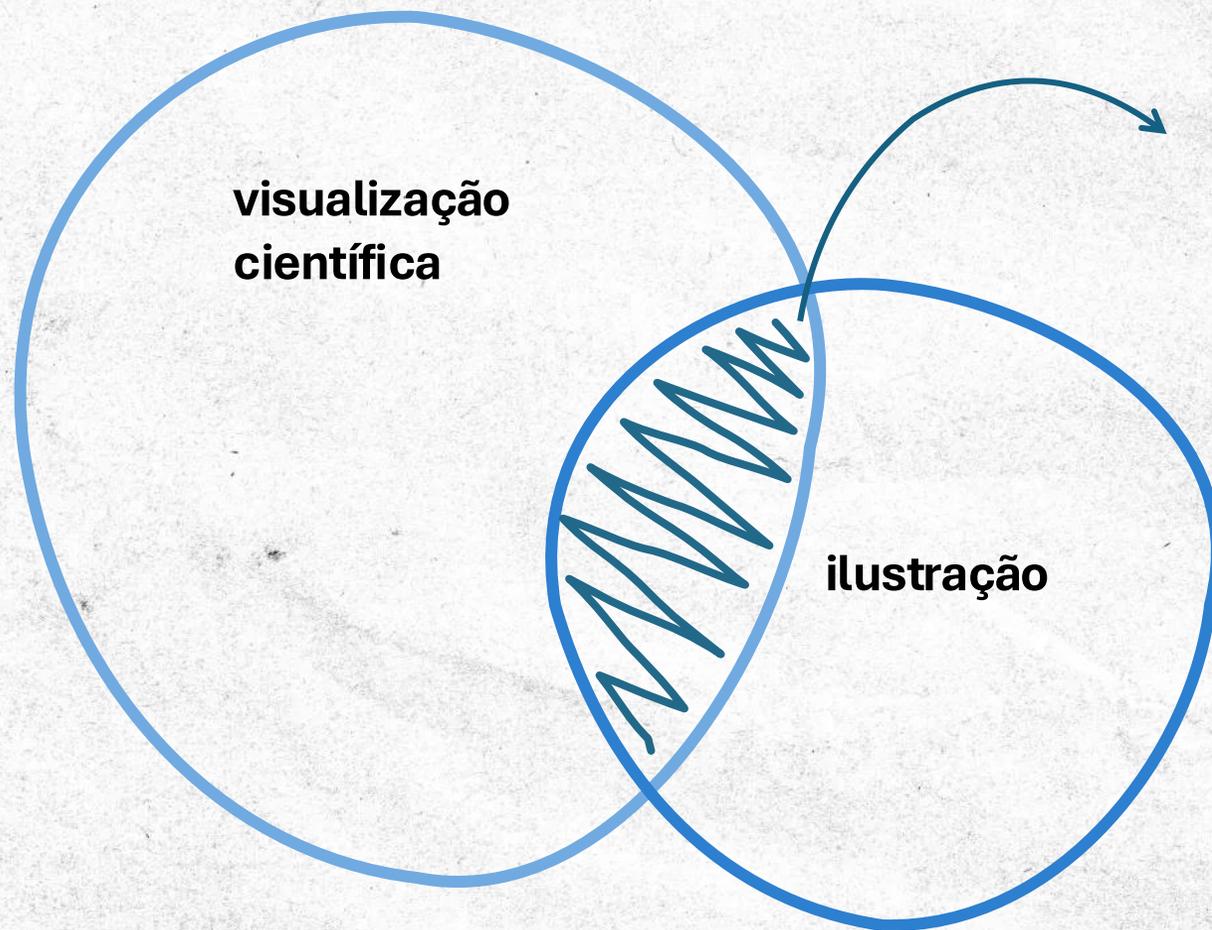
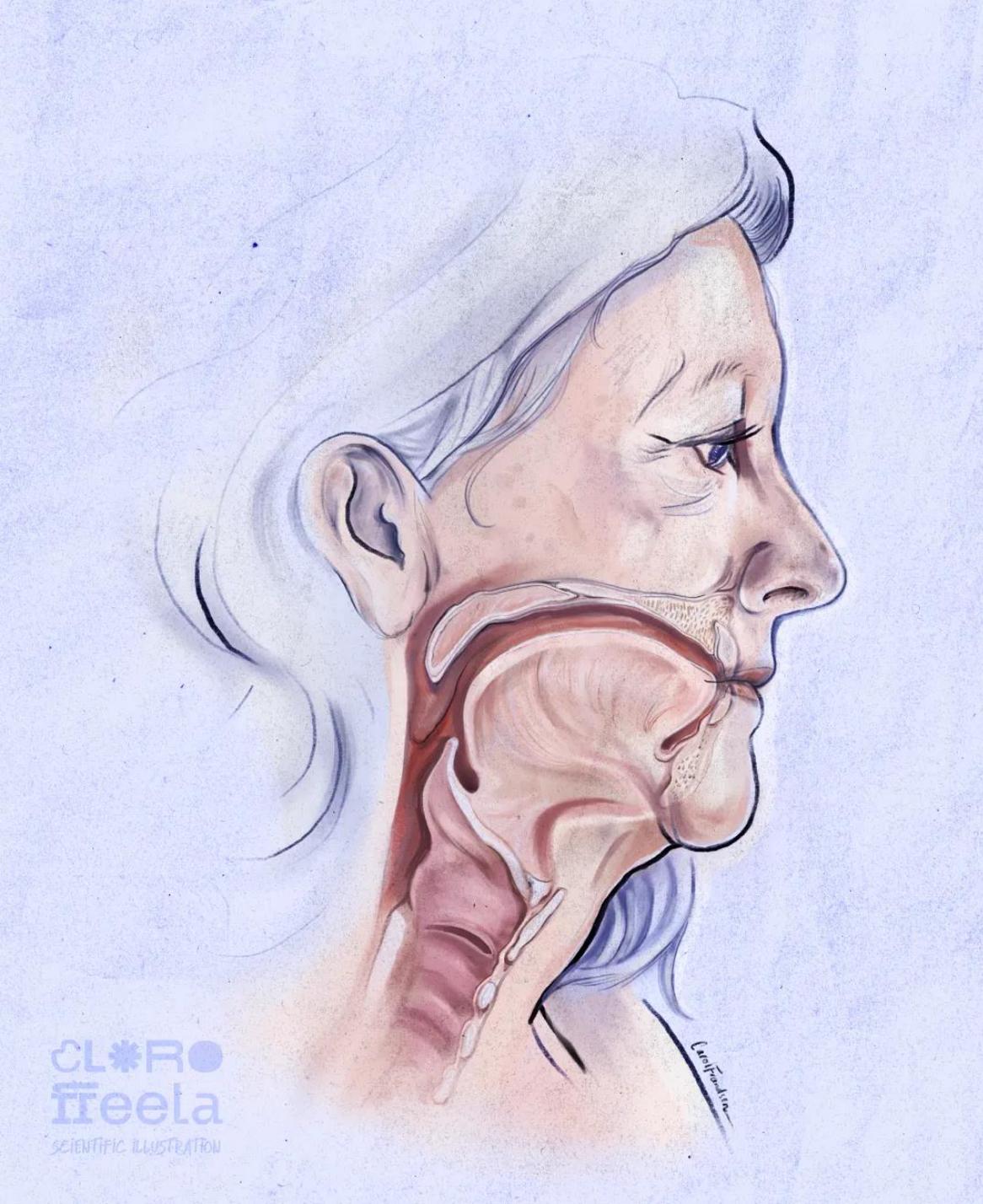


Ilustração científica

tem como objetivo

documentar, extrair e sintetizar a informação sobre um *arquétipo, processo, ou conceito científico* com objetividade, rigor e clareza;

transmitir conceitos novos ou colaborar na compreensão dos já existentes



Em resumo, a ilustração científica é uma simbiose entre arte e ciência, na qual beleza estética não é prioridade, mas a capacidade comunicativa é essencial!

development of PCs in older rats submitted to maternal LPD. Data are expressed as mean \pm SD. * $p < 0.05$. Scale bar: 100 μ m.

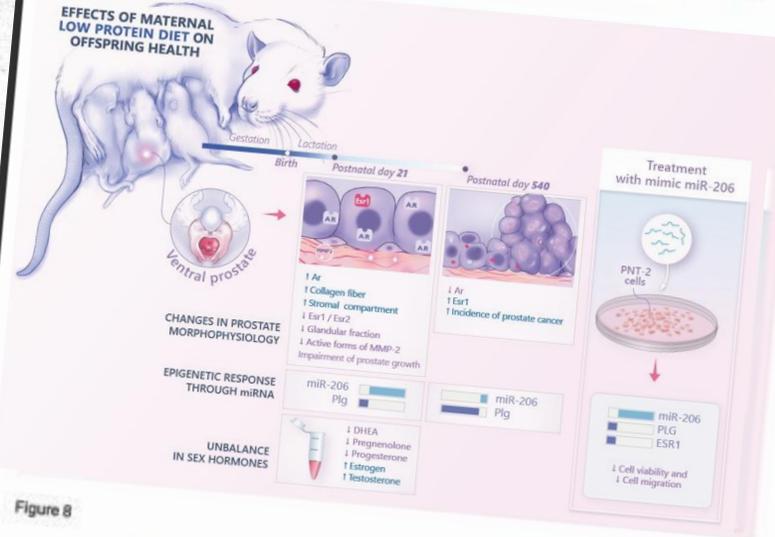


Figure 8

Overview of the main results. We associated maternal exposure to LPD with changes in the steroidogenesis process and impairment of prostate growth in young rats and increased incidence of carcinogenesis with aging. RNA-seq analysis suggests that deregulation of the miR-206 network, together with changes in the expression profile of ER α (*ESR1*) were potential cancer drivers involved in the developmental origin of prostate cancer in offspring rats exposed to maternal malnutrition.

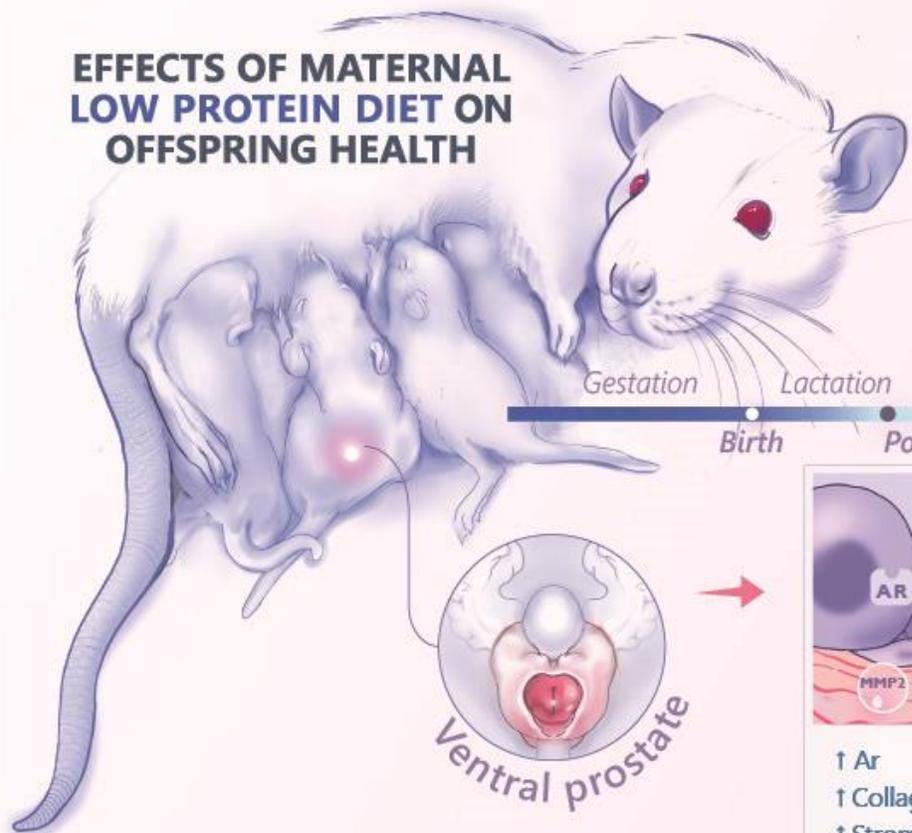
Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

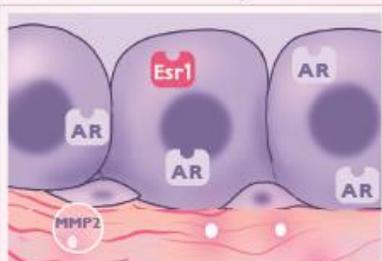
- [SupplementaryMaterial.docx](#)
- [SupplementaryFigure1.tif](#)

In: [Early-life origin of prostate cancer through deregulation of miR-206 networks in maternally malnourished offspring rats – Abstract – Europe PMC](#)

EFFECTS OF MATERNAL LOW PROTEIN DIET ON OFFSPRING HEALTH



CHANGES IN PROSTATE MORPHOPHYSIOLOGY

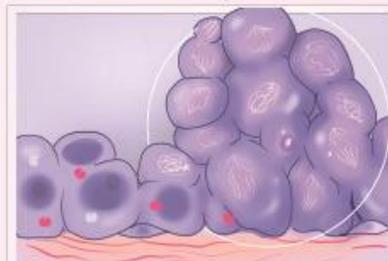


- ↑ Ar
- ↑ Collagen fiber
- ↑ Stromal compartment
- ↓ Esr1 / Esr2
- ↓ Glandular fraction
- ↓ Active forms of MMP-2
- Impairment of prostate growth

EPIGENETIC RESPONSE THROUGH miRNA



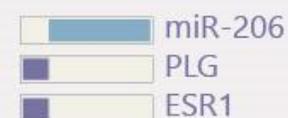
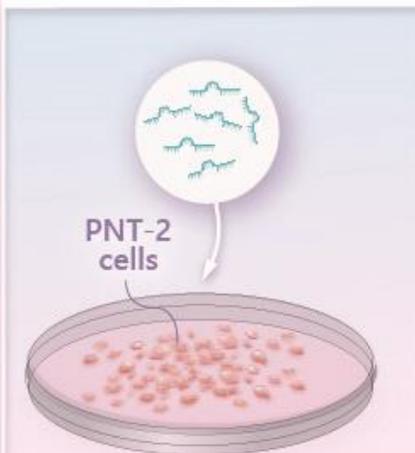
UNBALANCE IN SEX HORMONES



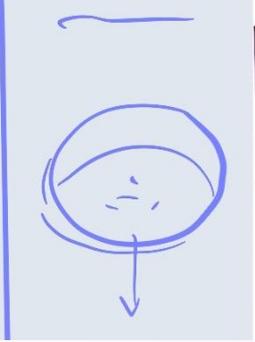
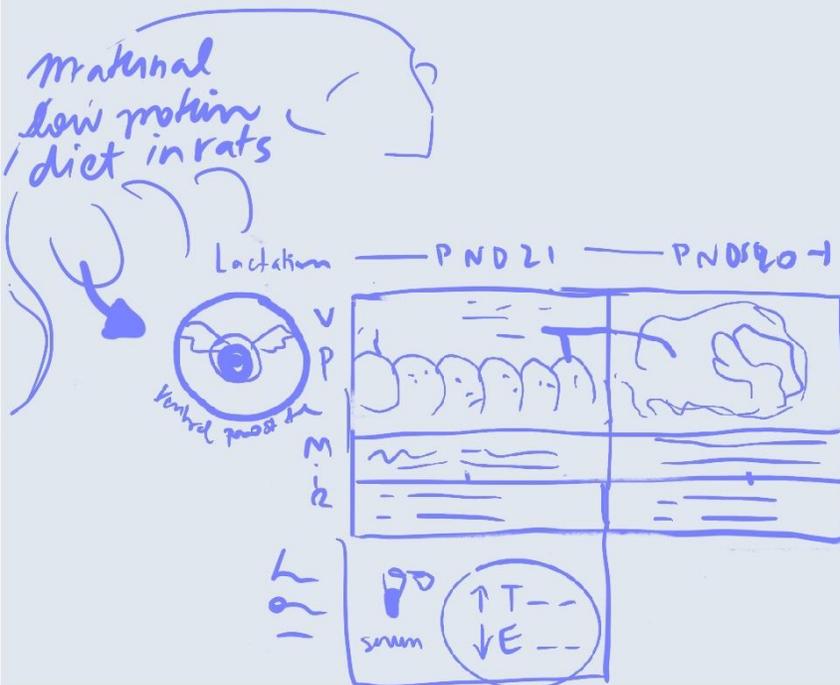
- ↓ Ar
- ↑ Esr1
- ↑ Incidence of prostate cancer



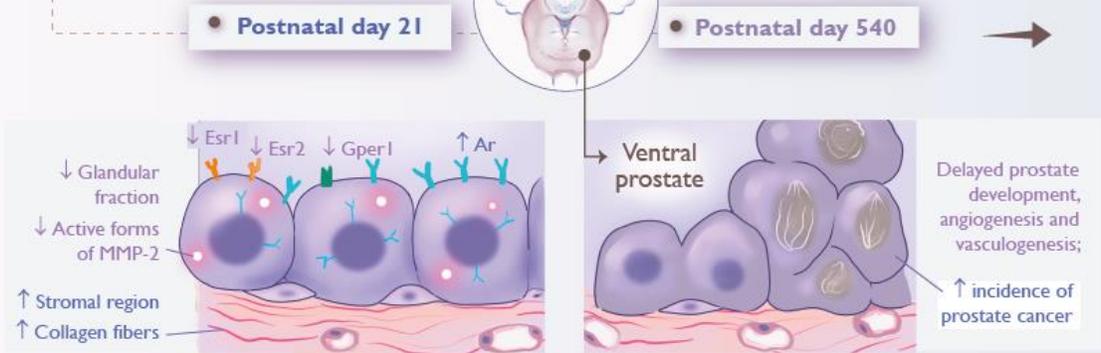
Treatment with mimic miR-206



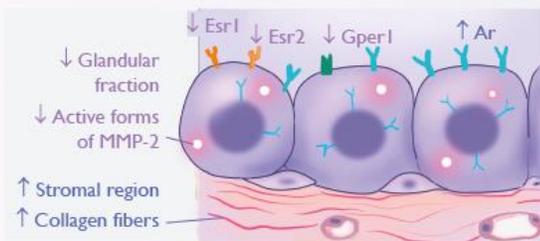
- ↓ Cell viability and
- ↓ Cell migration



MATERNAL PROTEIN RESTRICTION IN RATS



PROSTATE ALTERATIONS



HORMONAL EFFECTS

↓ Pregnenolone ↓ Progesterone

↓ DHEA ↑ Estrogen/testosterone ratio

EPIGENETIC RESPONSE

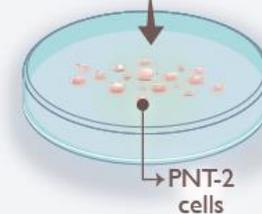
miR-206

Plg

miR-206

Plg

Treatment with miR-206 mimic



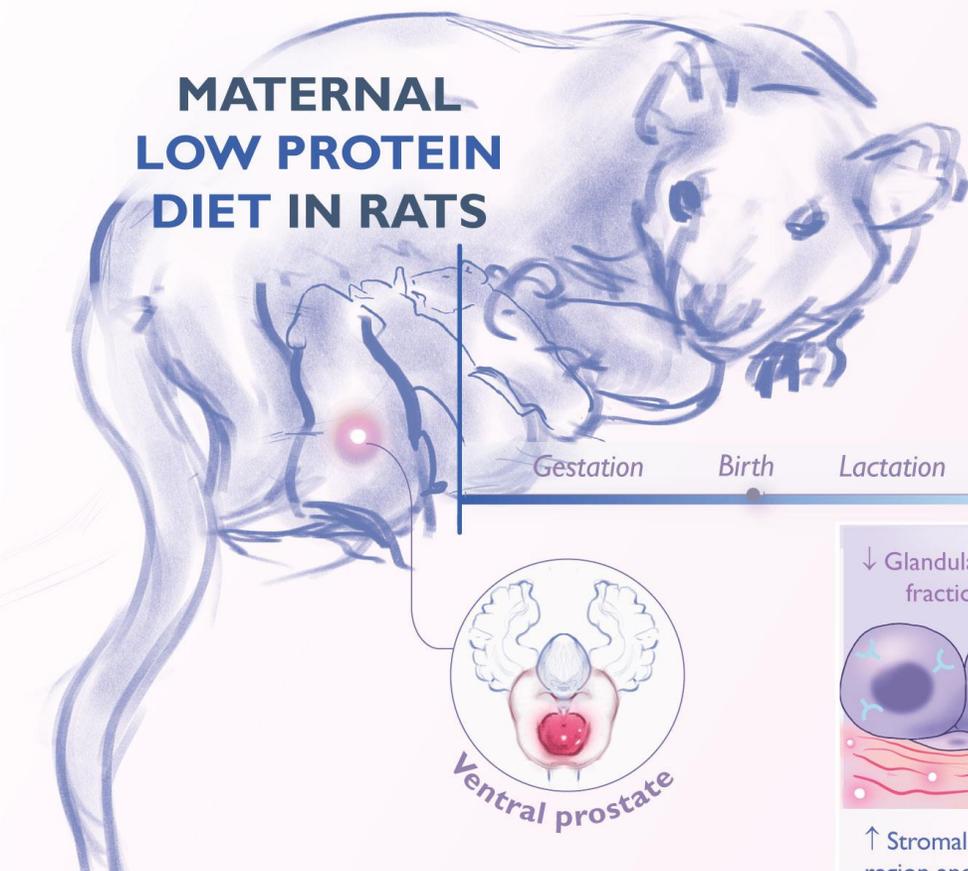
miR-206

Plg

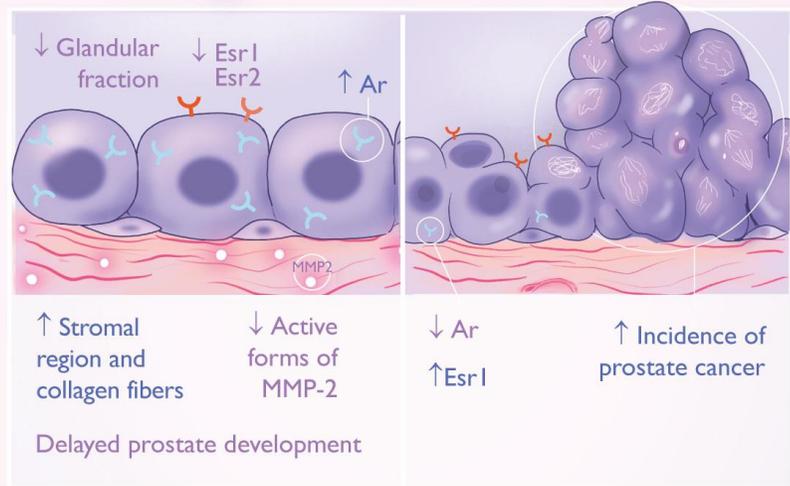
↓ cell viability and

↑ cell-cell adhesion

MATERNAL LOW PROTEIN DIET IN RATS



Gestation Birth Lactation Postnatal day 21 Postnatal day 540



PROSTATE ALTERATIONS

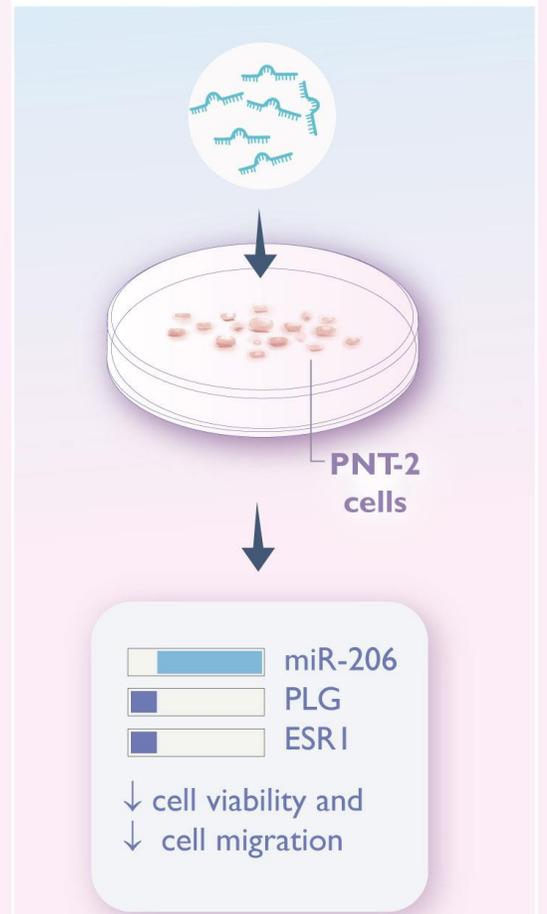
EPIGENETIC RESPONSE



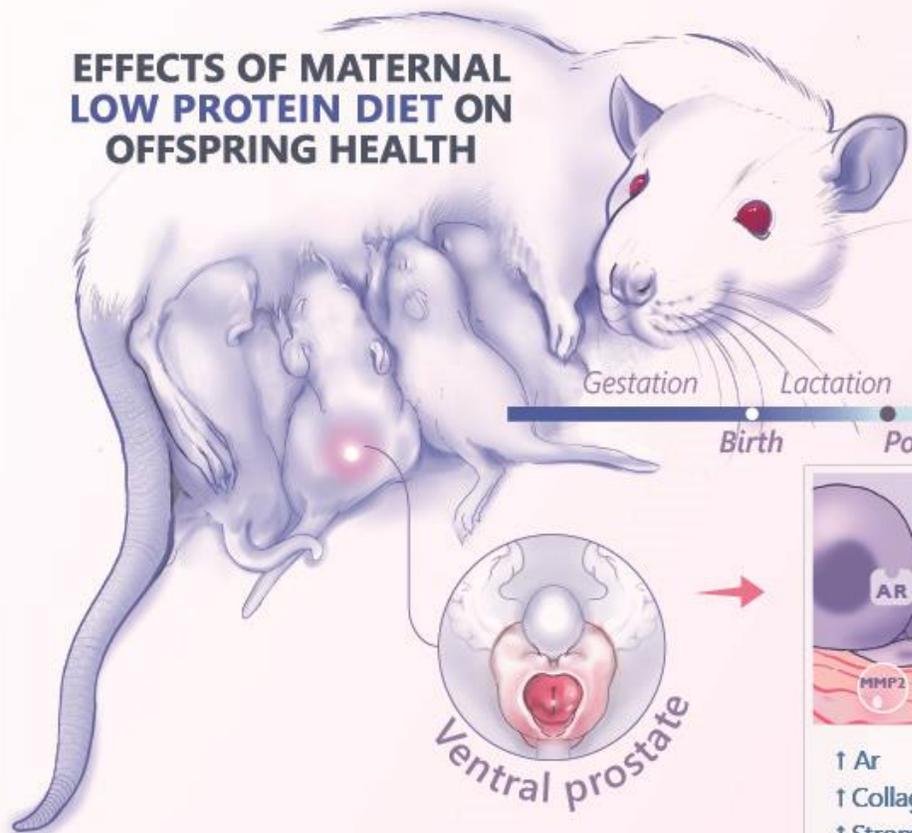
HORMONAL EFFECTS



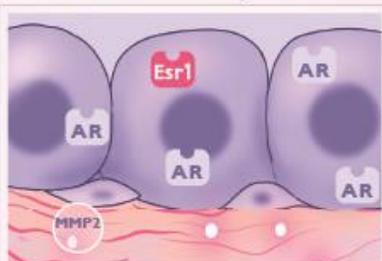
Treatment with miR-206 mimic



EFFECTS OF MATERNAL LOW PROTEIN DIET ON OFFSPRING HEALTH



CHANGES IN PROSTATE MORPHOPHYSIOLOGY

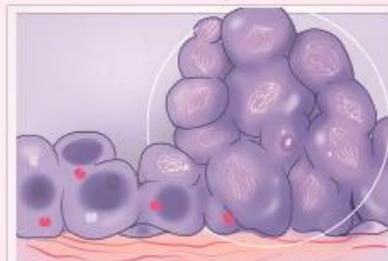


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EPIGENETIC RESPONSE THROUGH miRNA



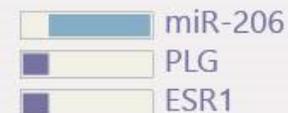
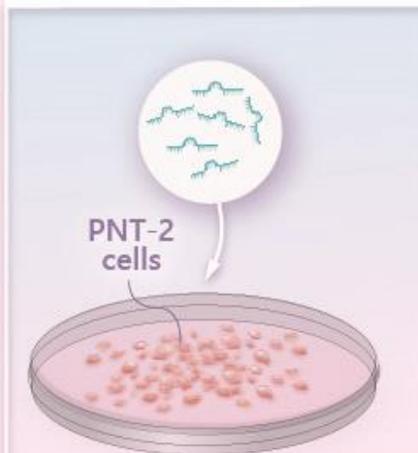
UNBALANCE IN SEX HORMONES



- ↓ Ar
- ↑ Esr1
- ↑ Incidence of prostate cancer



Treatment with mimic miR-206



- ↓ Cell viability and
- ↓ Cell migration



7 anos



12 anos



15 anos



22 anos



*Di*ciências
Biológicas

UNIVERSIDADE ESTADUAL PAULISTA
"JULIO DE MESQUITA FILHO"



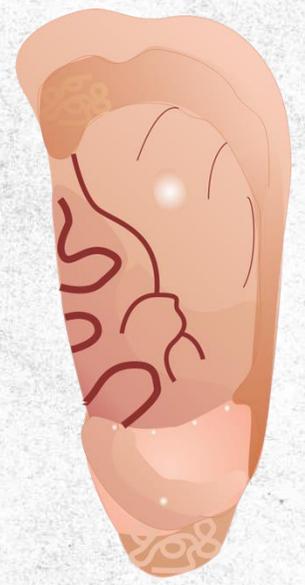
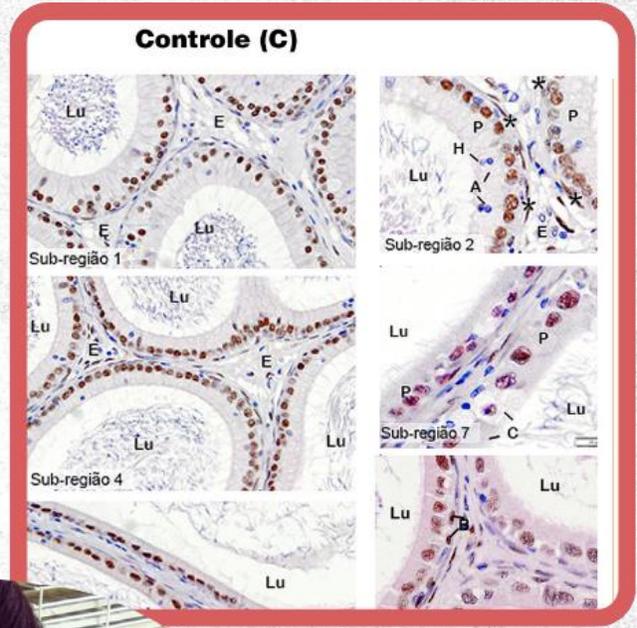
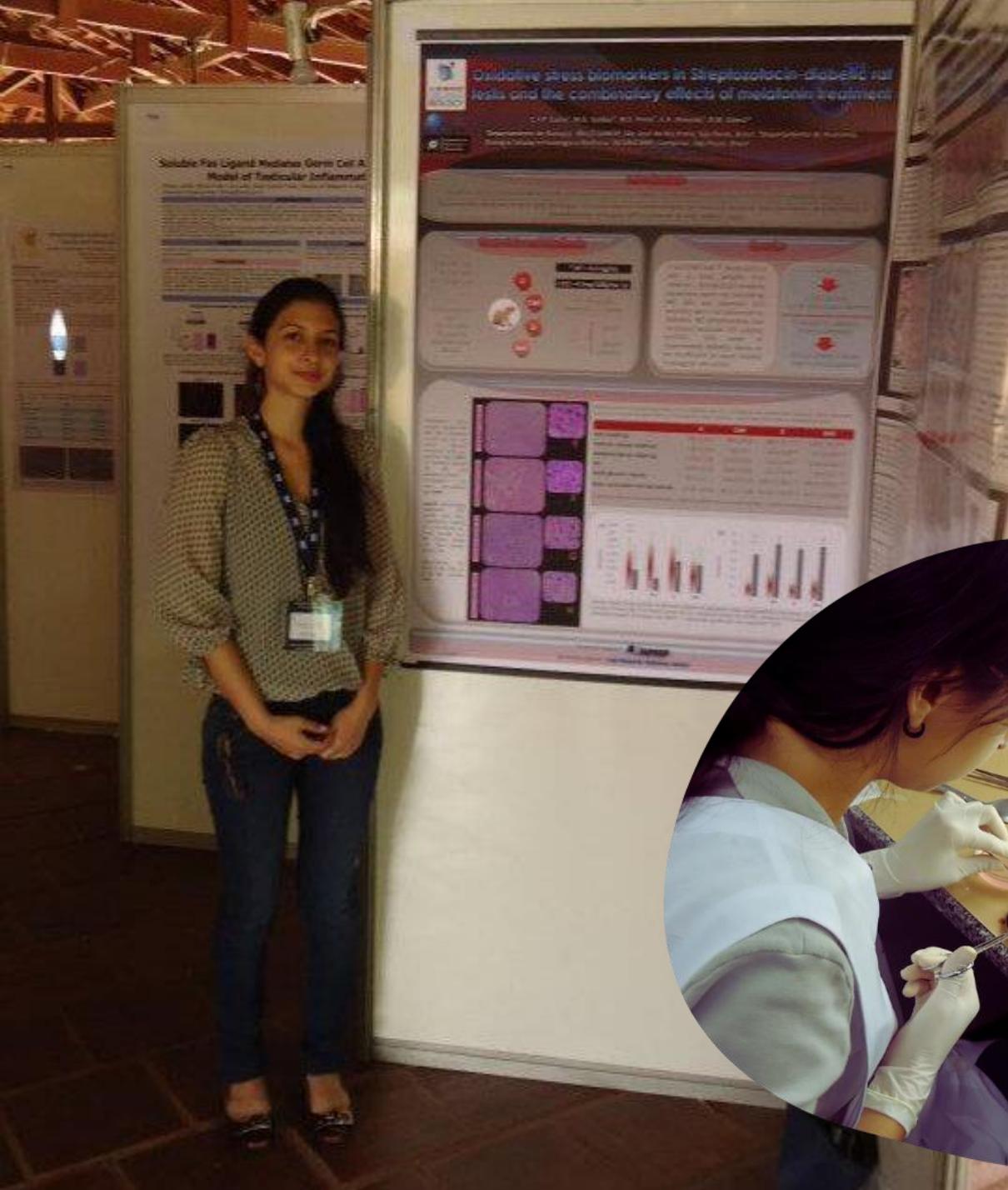
Formandos 2011

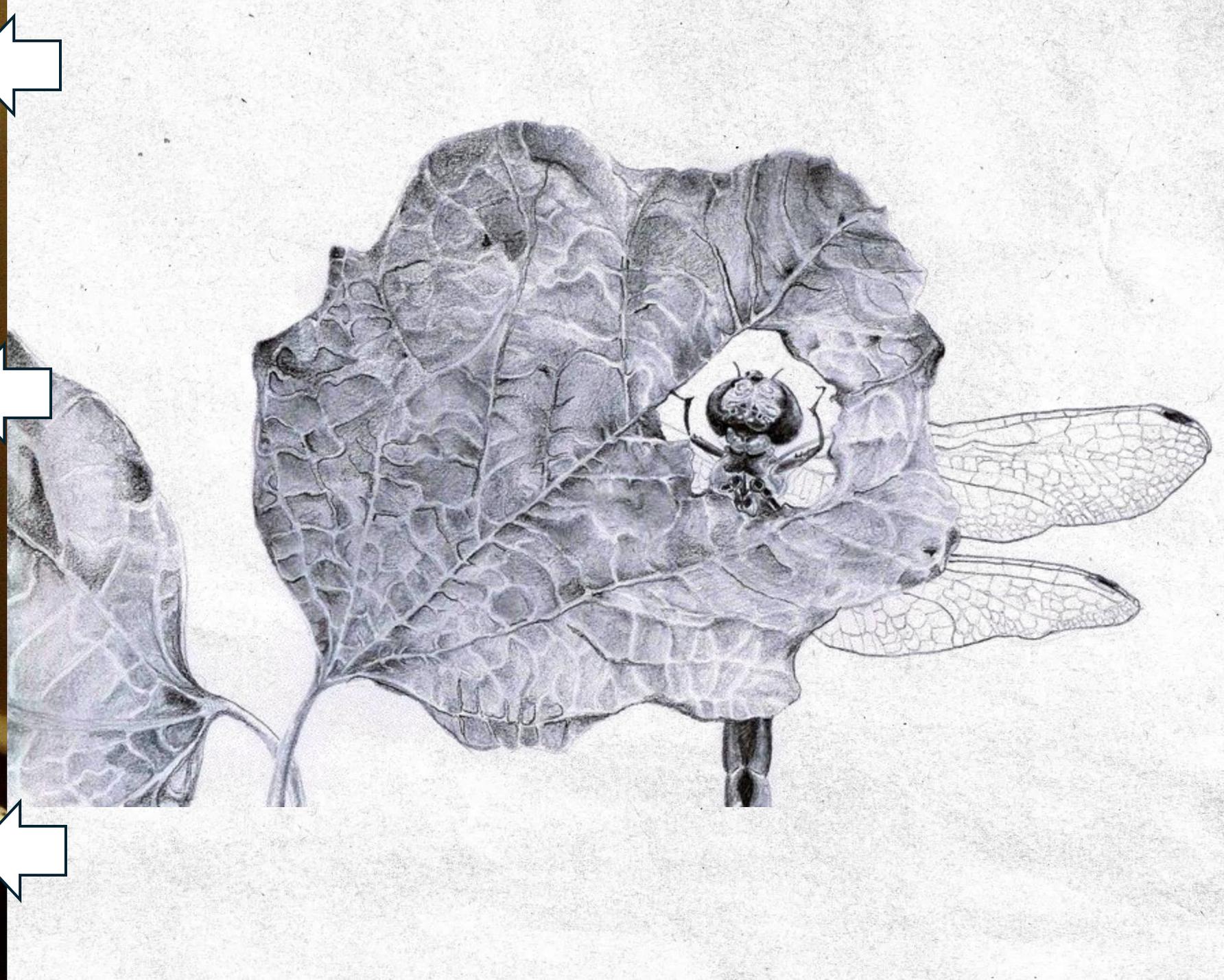
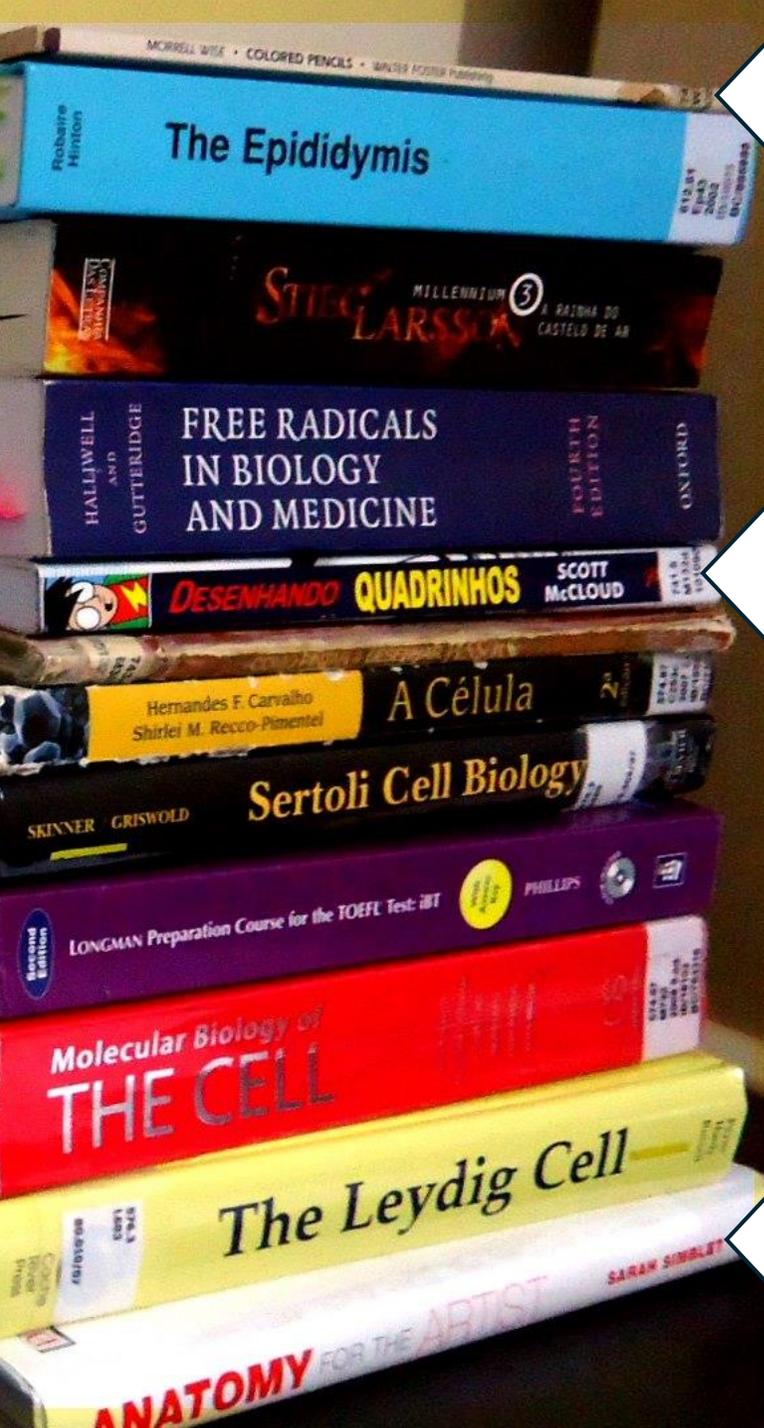
UNESP

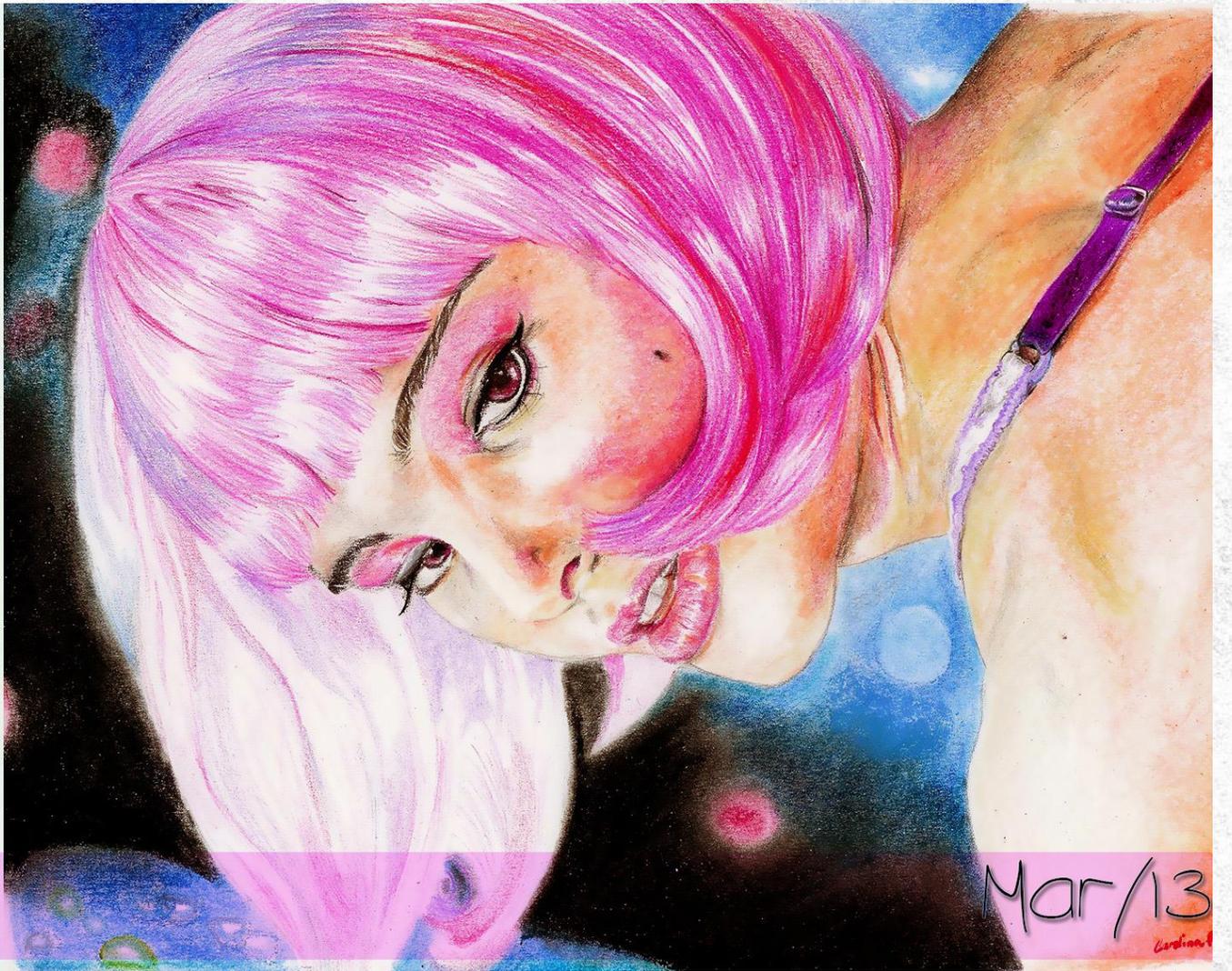
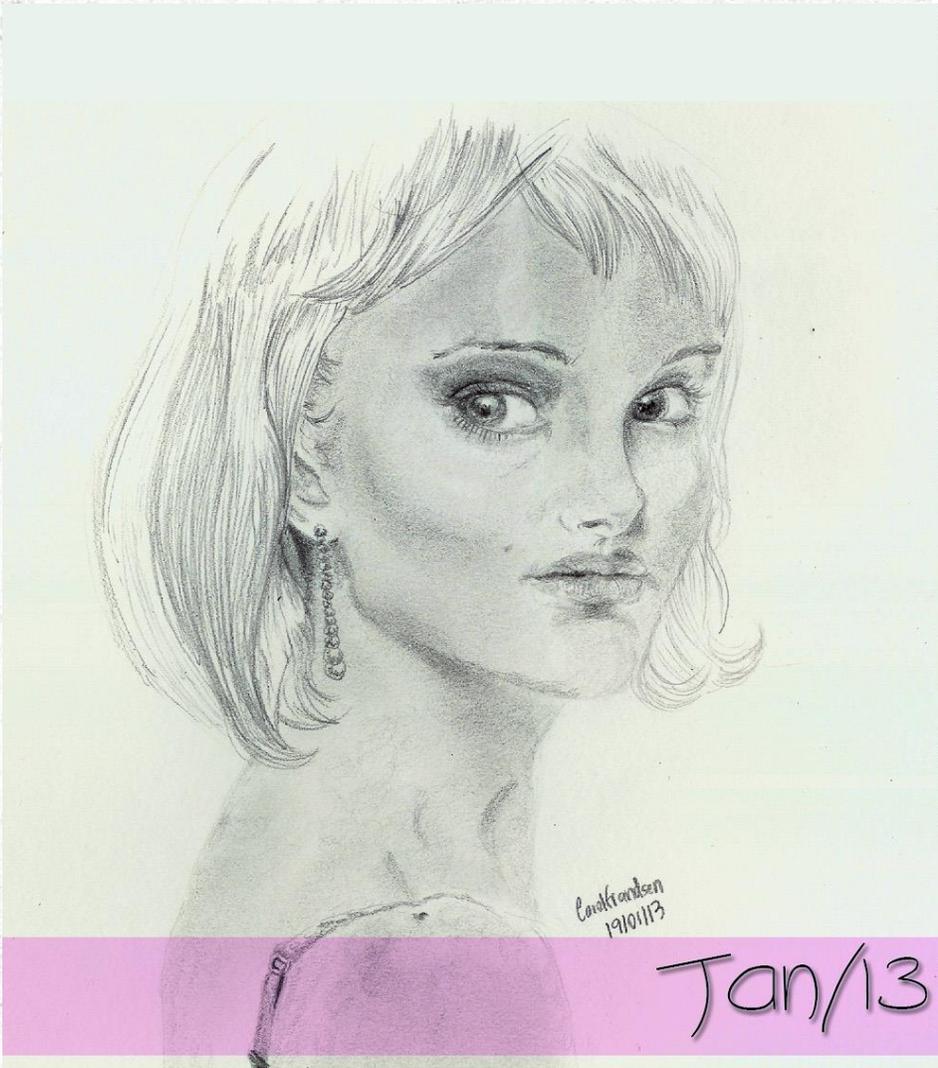




Minicurso IBILCE (2012?) - Prof, Marcos Ferraz, **fundador do Núcleo de Ilustração Científica (NicBio) da UNB em Brasília.**

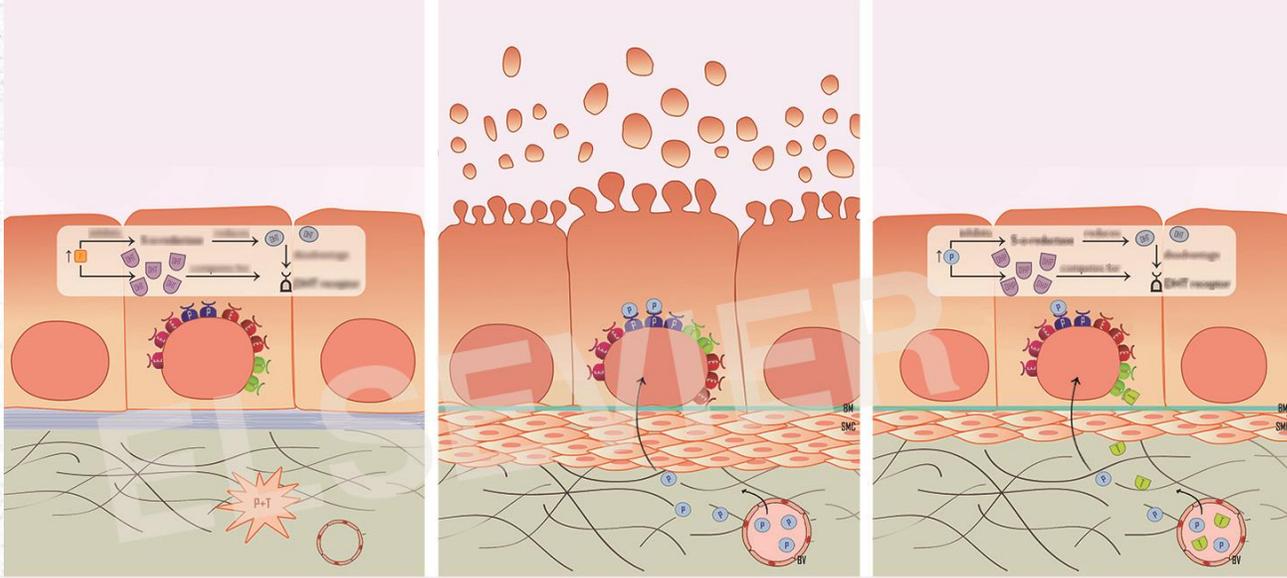






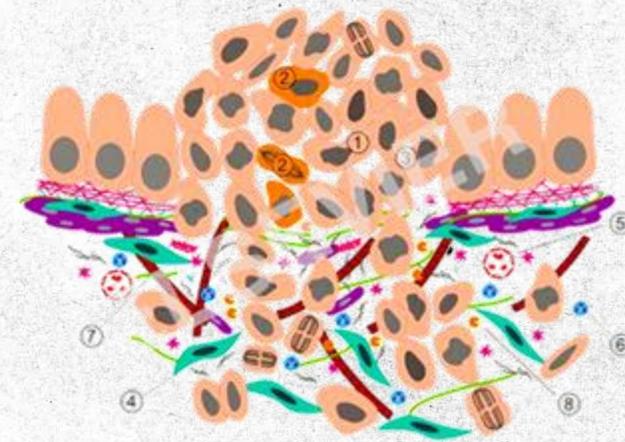
Carol Frandsen





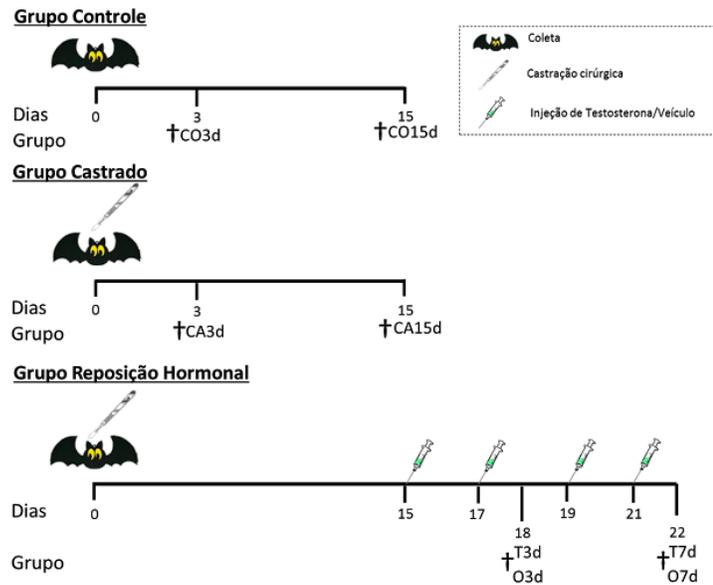
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Life Sciences
ELSEVIER



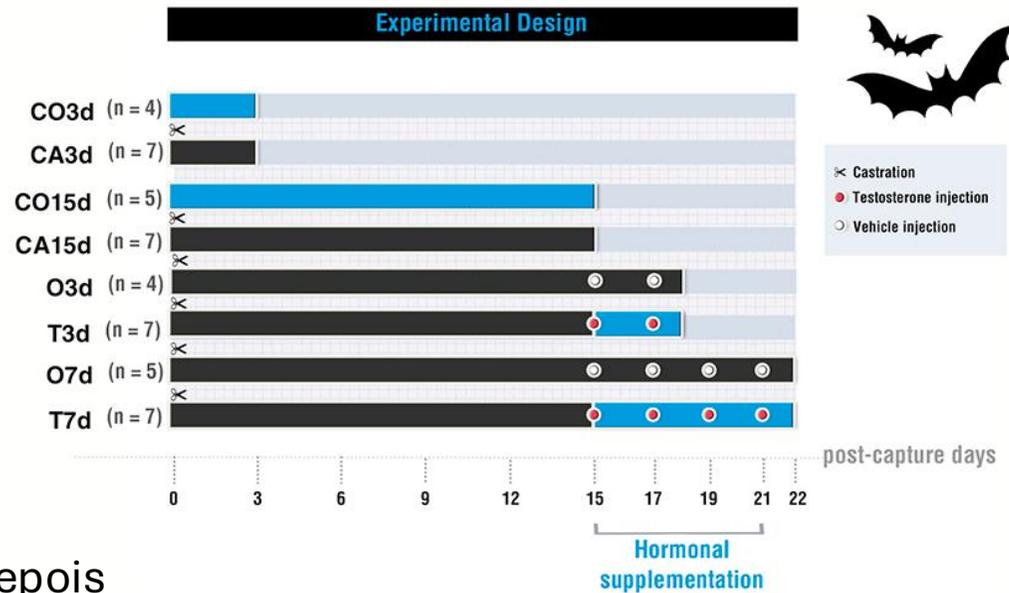
doi:10.1016/j.acthis.2014.10.009

Acta Histochemica
ELSEVIER



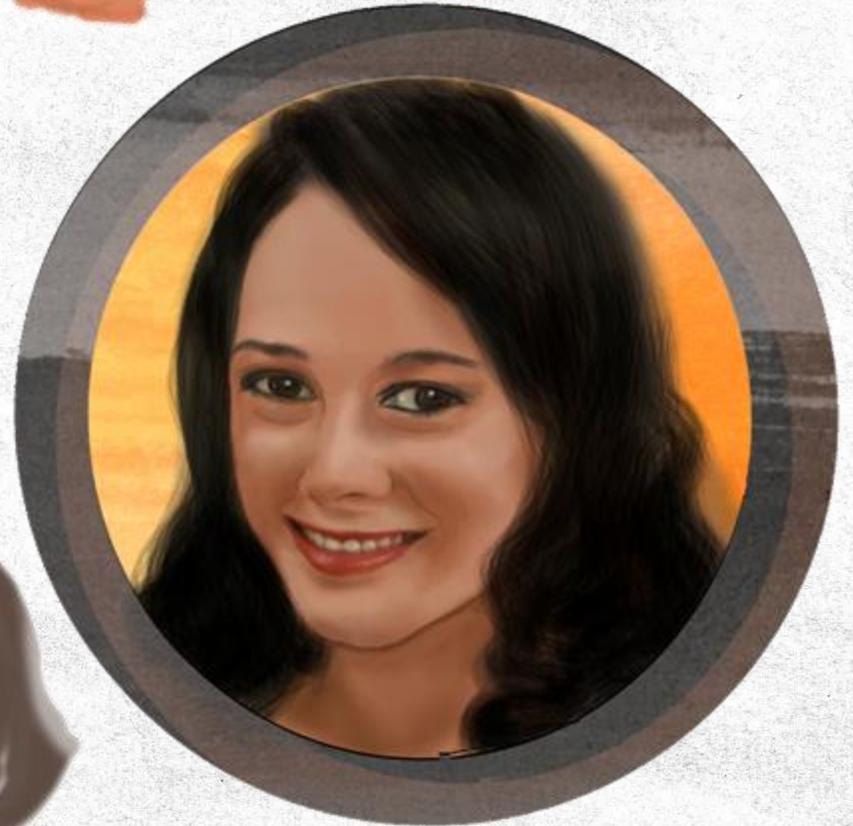
antes

depois





Carol Frandsen





Cuíca CAEB (2015)



Arte de Diana Carneiro



CENTRO-OESTE

Núcleo de Ilustração Científica da Universidade de Brasília (NICBio)

NICBIO oferece cursos de extensões e as seguintes disciplinas optativas tanto para a graduação quanto para a pós-graduação. Na graduação, tem-se: Ilustração Científica, Técnicas Avançadas em Ilustração Científica, Ilustração Científica aplicada à Prática de Campo, Tópicos em Ilustração Científica e Estágio em Ilustração Científica.

Na pós-graduação, tem-se a disciplina Introdução à Ilustração Científica, ministrada para o Programa de PósGraduação em Ecologia
www.nicbio.unb.br.

NORDESTE

Universidade Estadual de Feira de Santana

Disciplina optativa ofertada para os cursos de Bacharelado e 2 Site do núcleo:
http://www.ib.usp.br/nic/?page_id=17 Acesso: 27/07/2017 Licenciatura em Biologia, o nome é Percepção Morfológica e consiste em percepção visual e representação gráfica de formas orgânicas: animadas e inanimadas, dando-se ênfase à biomorfologia e a mineromorfologia. Estrutura das formas orgânicas e aparência natural: forma, volume, proporção, cor, textura, simetria, ramificação, rugosidade, transparência e porosidade. Métodos de registro e técnicas (nanquim e aquarela). Possui carga horária de 60 horas e é ministrada pelos professores Ivoneide Costa, Antonio Wilson de Souza e Robson Santana.

Universidade Federal do Recôncavo Baiano, campus de Cruz das Almas

Disciplina: Ilustração Científica para o curso de Bacharelado e Licenciatura de Biologia e eventualmente com participação de estudantes de Engenharia de Pesca e Agronomia.



SUDESTE

Escola Nacional de Botânica Tropical:
Programa de Ilustração Botânica no
Jardim Botânico (RJ)

Núcleo de Ilustração Científica (NIC) na
UFLA

UF de Lavras apresenta uma disciplina de Ilustração
Entomológica na pós-graduação em Entomologia

Curso de Extensão em Ilustração
Científica da UFMG

Núcleo de Ilustração Científica
(NIC-IB) da USP

SUL

Centro de Ilustração Botânica do
Paraná (CIBP), em Curitiba

Nacasa Coletivo Artístico, em
Florianópolis (Santa Catarina)

CURSO

Ilustração Botânica em **Aquarela**

Presencial

Carga horária: 48h

Inscrições até dia 7/8/2025

www.gov.br/jbrj



MINISTÉRIO DO
MEIO AMBIENTE E
MUDANÇA DO CLIMA

GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

ILUSTRAÇÃO CIENTÍFICA

Curso Presencial e Online

Ilustração científica é a componente visual da divulgação das Ciências e pode ser definida como uma área de intersecção entre a Ciência e a Arte, cuja finalidade é auxiliar o pesquisador a comunicar suas ideias e descobertas, em forma de desenhos detalhados. É um curso em dois módulos básicos, que pode se estender de acordo com a necessidade e a vontade do aluno. Nestes dois módulos iniciais, é trabalhada a técnica do grafite voltada para a ilustração científica.



CARGA HORÁRIA
88 HORAS



NIVEL EXIGIDO
INTERMEDIÁRIO



Aulas particulares

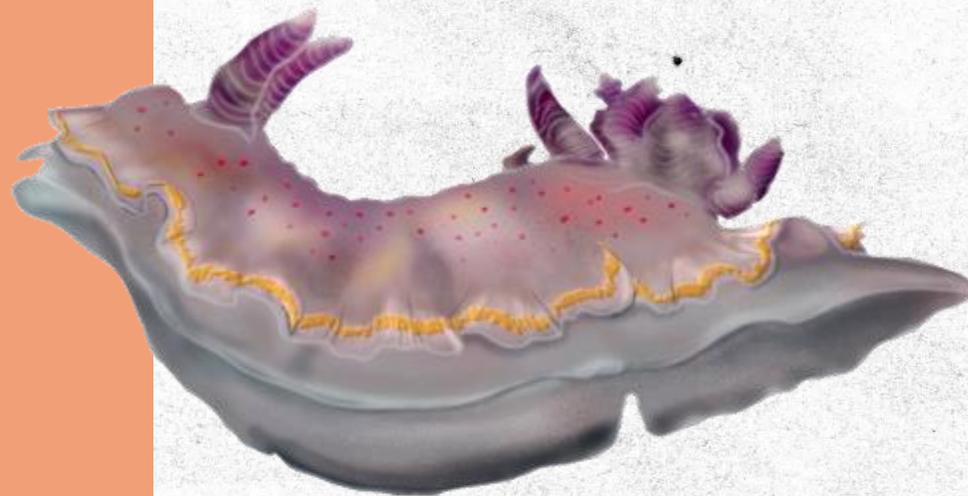
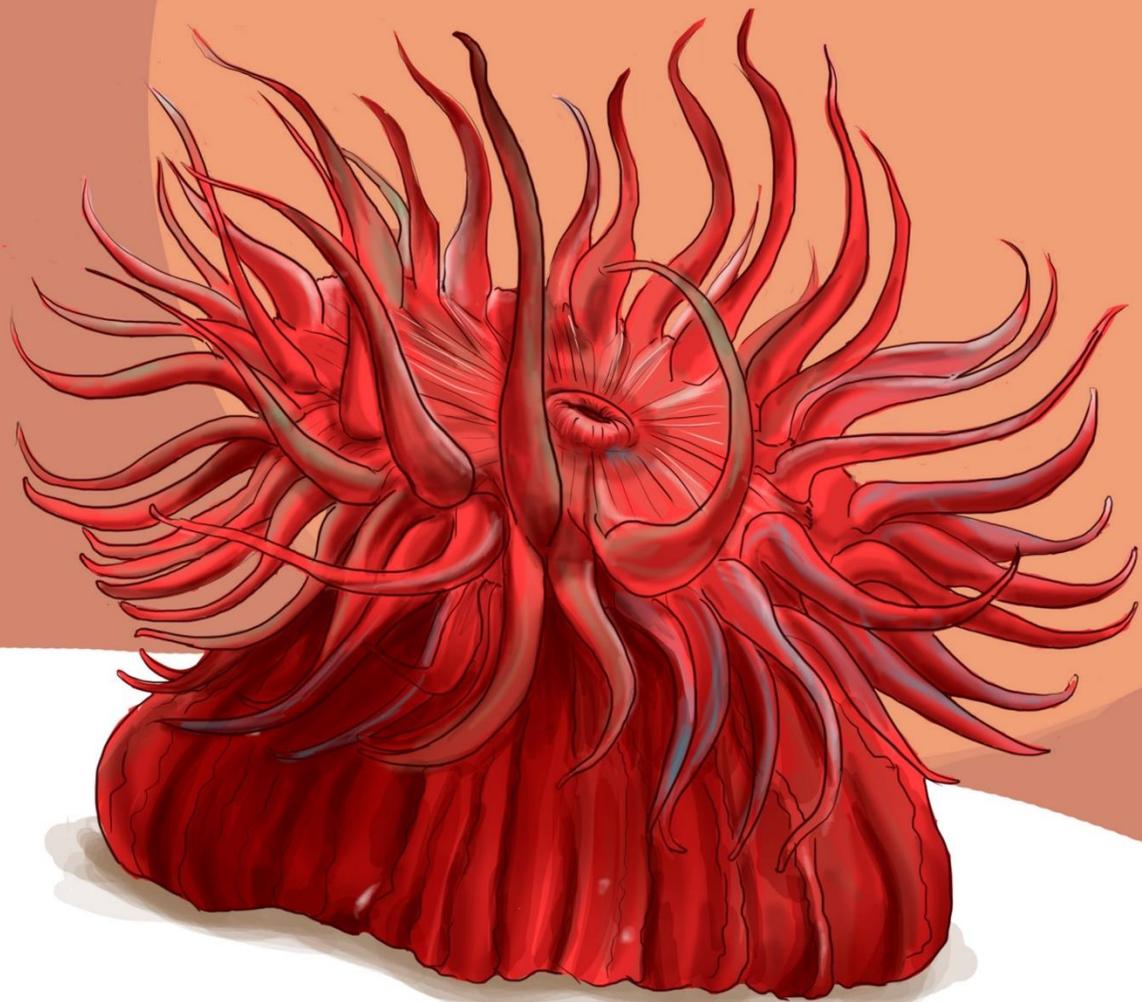
- Dulce Nascimento
- Rogério Lupo
- Vivian Hackbart
- Diana Carneiro
- Vanessa Seiko Sugihara
- Leandro Lopes de Souza
- Fatima ZagoneI

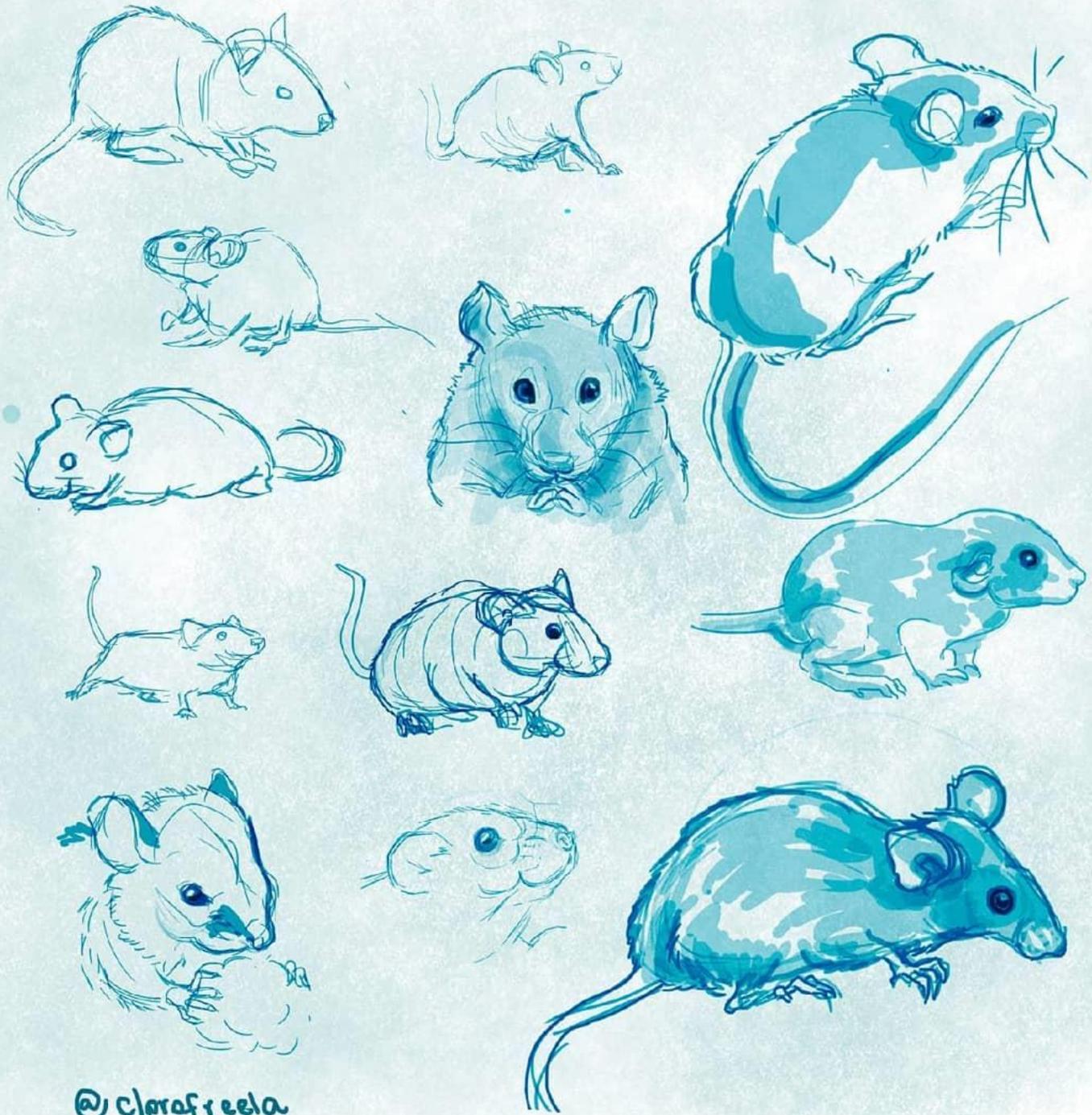
<https://clorofreela.com/cursos-ic-br>



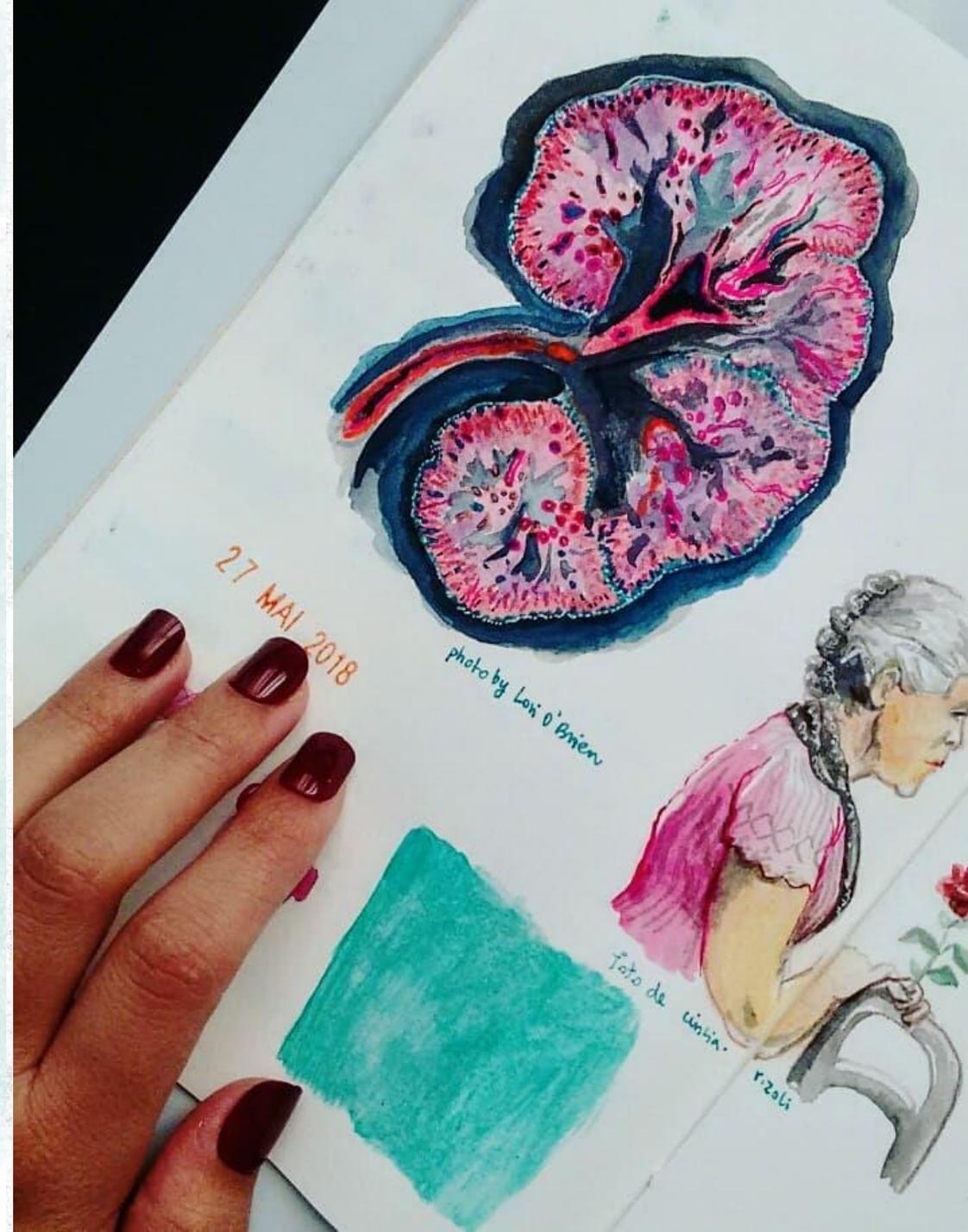
Acervo pessoal

Bunodosoma caissarum





@clarafreela



27 MAI 2018

photo by Lori O'Brien

foto de unsia. rzali



e-book

EMBRIOLOGIA Humana Integrada

Animações e Casos Clínicos

Luis Antônio Violin Pereira
Marilia Lopes Justino
Suzana Guimarães Moraes

Conteúdos Suplementares Associados ao e-book |

ento-
ria
lrvria
Tecnológico

Humana Integrada: Animações e Casos Clínicos. Todos os Direitos Reservados.

Termos e Condições | Requisitos para leitura do e-book
Como Referenciar o e-book

Embriologia Ovogênese

Ovogênese

1. Pré-gonadal

2. Gonadal

- Mitose Ovogônia
- Fase S para meiose I
- Ovogônia → Ovócito I
- Início da Meiose I
- Ovócito I
- Folliculogênese
 - Folículo primordial → Folículo primário unilaminar
 - Folículo primário unilaminar → Folículo primário multilaminar
 - Folículo primário multilaminar → Folículo antral
 - Folículo antral → Folículo maduro

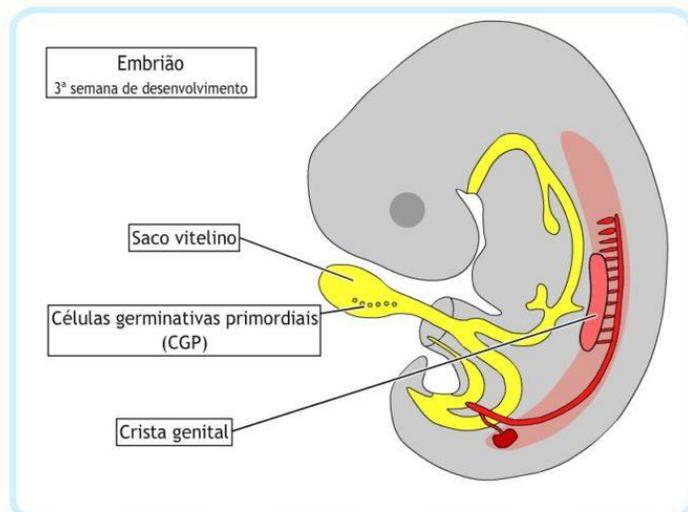
- Fim da meiose I
- Ovócito I → Ovócito II
- Início da Meiose II
- Ovócito II
- Ovocitação

3. Pós-gonadal

- Fim da meiose II
- Ovócito II → Óvulo / Zigoto

Desativar Legenda

Capítulo 3





CAPÍTULOS

EXERCÍCIOS

AMOSTRA

OBRA ANTERIOR

SOBRE

COMPRA ▾

CONTATO

Acesso via
UNICAMP

Acesso via
UNESP - Botucatu

LOGIN

LOGIN ou E-MAIL

carolina

SENHA

.....

PRIMEIRO ACESSO

ESQUECI MINHA SENHA

ENTRAR



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EMBRIOLOGIA HUMANA

e-book

ESSENCIAL

Animações, Texto, Exercícios e Casos Clínicos

The Life *Press*

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Histologia &
MICROSCOPIA VIRTUAL

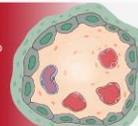
LUIS VIOLIN

CAROLINA FRANDBSEN

SUZANA MORAES

MEMBRANA PLACENTÁRIA

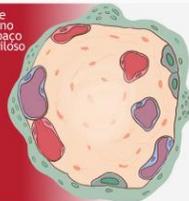
Sangue materno no espaço intervilloso



C

10 SEMANAS

Sangue materno no espaço intervilloso

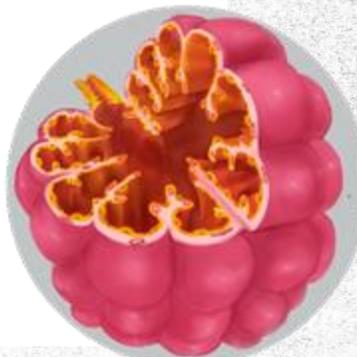
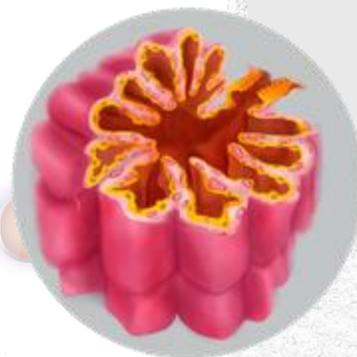
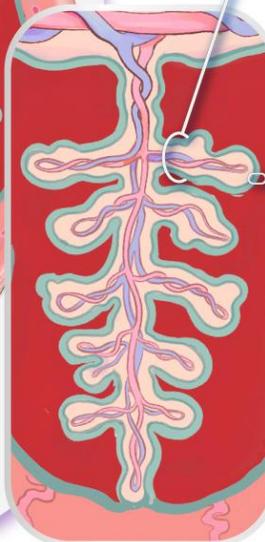


D

À TERMO

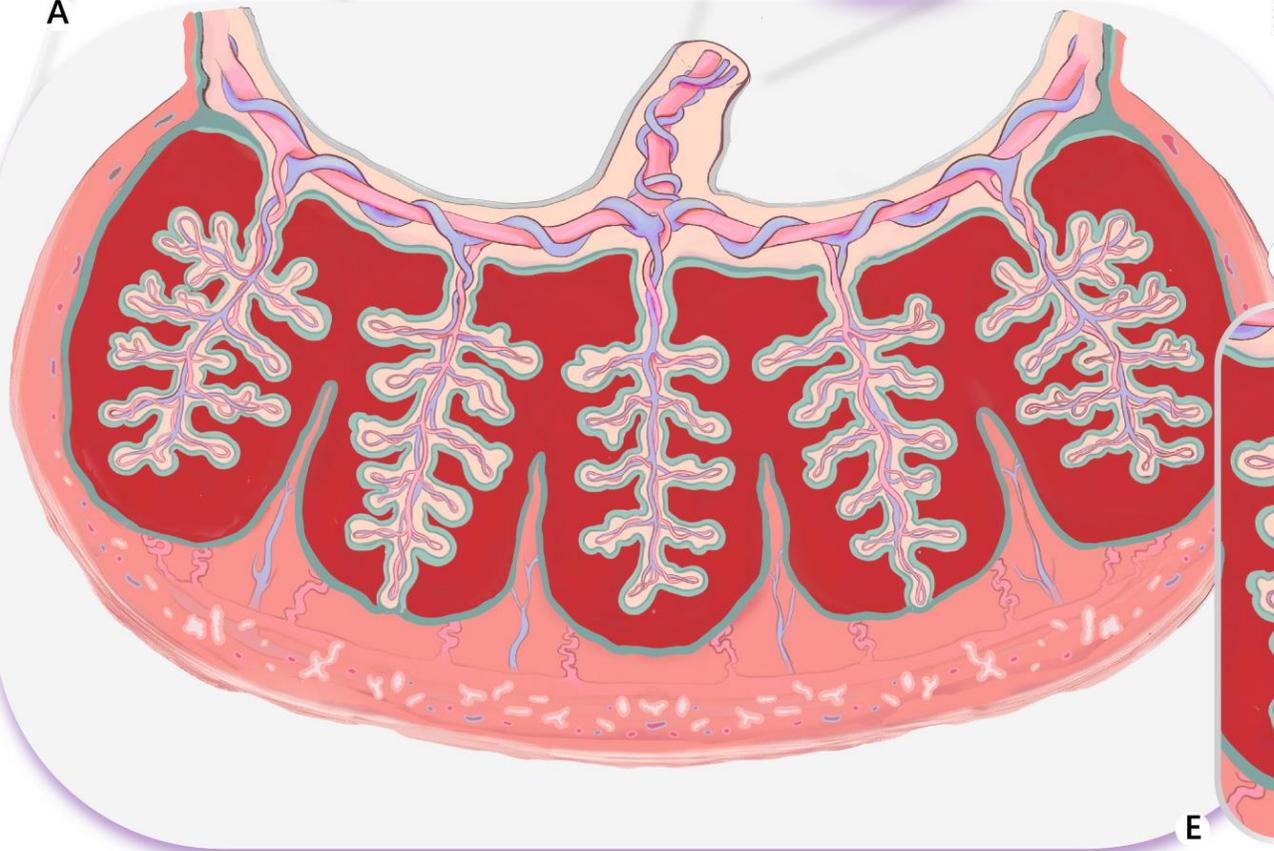
(CORTE TRANSVERSAL)

VILOSIDADE CORIÔNICA

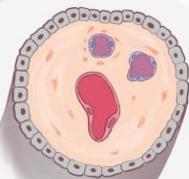


ESTRUTURA DA PLACENTA

A



B



CORDÃO UMBILICAL
(CORTE TRANSVERSAL)

E

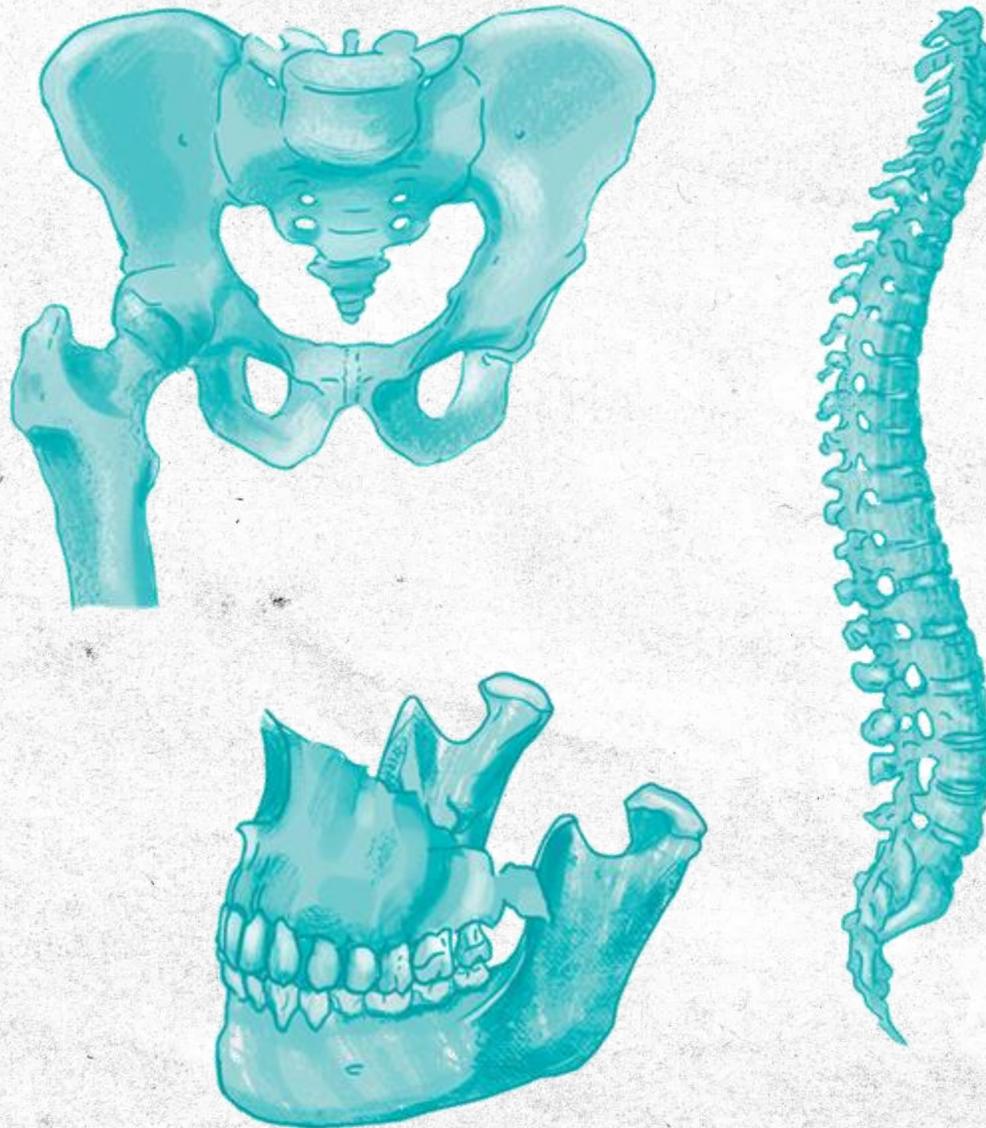


-25% DE
MASSA
ÓSSEA

caracteriza
a osteoporose
QUE ATINGE



COM 50 OU MAIS
ANOS DE IDADE



tempo

Formação do coágulo

Perfurações realizadas na superfície do leito receptor, antes da fixação do enxerto, provocam sangramento local.

1ª semana

Em conjunto com o sangue presente no próprio enxerto ósseo, o sangramento do leito receptor fornece nutrientes e oxigênio às células da superfície do enxerto ósseo, permitindo que uma quantidade desconhecida dessas células do enxerto permaneça viva. Devido à coagulação sanguínea, o sangramento local (oriundo do enxerto e do leito receptor) evolui para a formação de uma malha frouxa de fibrina (coágulo), que impede a continuidade do sangramento e concentra nutrientes e oxigênio entre o enxerto e o leito receptor.

Início do processo inflamatório

O coágulo fornece suporte para estabelecer o processo inflamatório e a proliferação e migração de células indiferenciadas que irão consolidar o foco de união entre enxerto e leito receptor.

Início da revascularização

O arranjo espacial tridimensional (principalmente da porção inorgânica do enxerto ósseo) funciona como um arcabouço ou suporte que facilita o processo de migração e invasão de brotamentos vasculares e células indiferenciadas, partindo do coágulo em direção ao enxerto (ostecondução), caracterizando o início da fase de revascularização do enxerto ósseo.

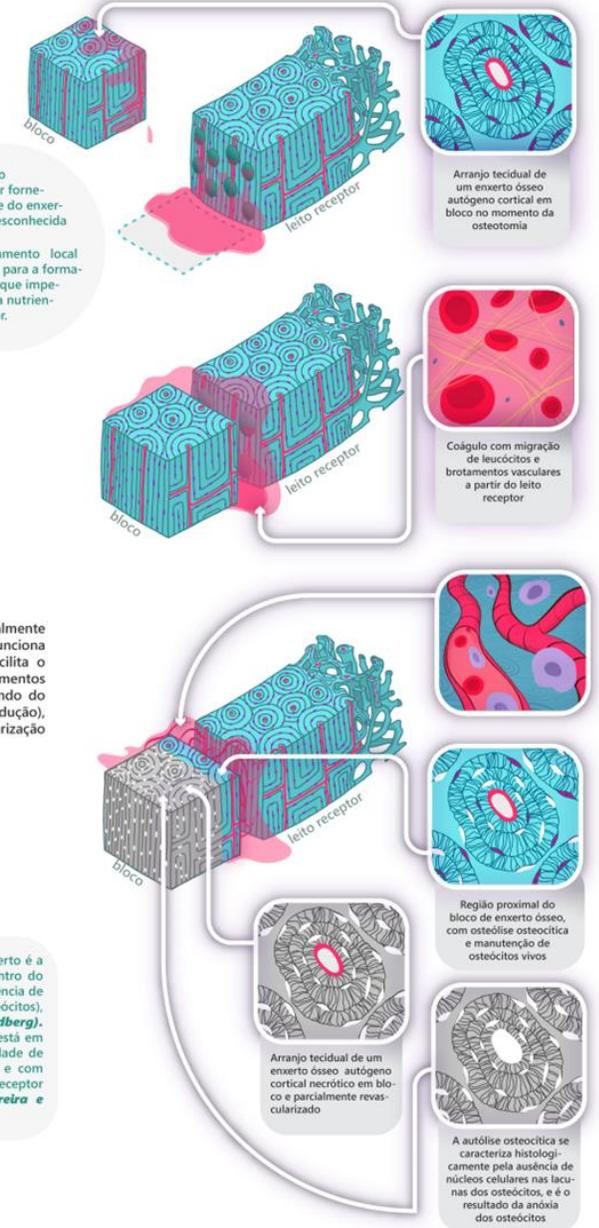
Osteólise osteocítica

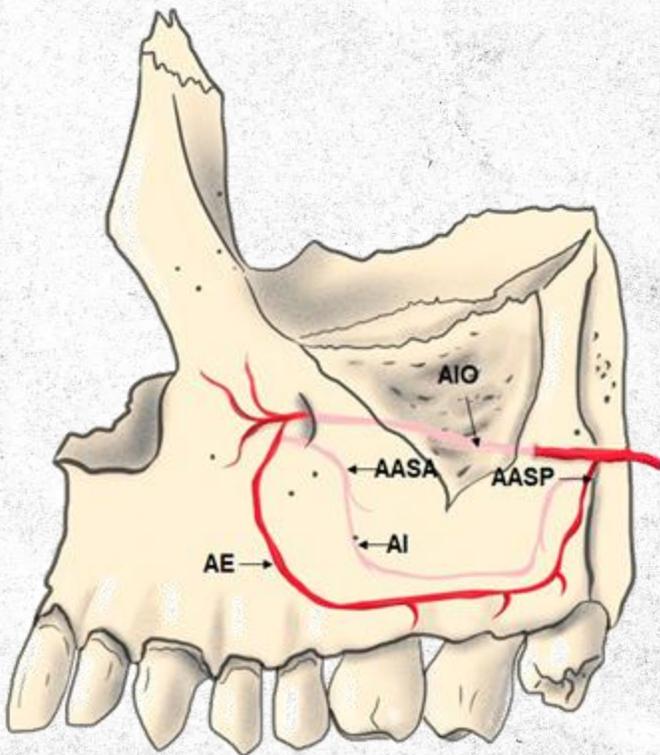
A velocidade de revascularização do enxerto ósseo não é acompanhada pelas necessidades nutricionais das células do enxerto e, portanto, a maior parte do enxerto necrosa (necrose asséptica).

A manifestação histológica da necrose do enxerto é a formação de lacunas vazias de osteócitos dentro do enxerto, denominada autólise osteocítica (ausência de núcleos celulares nas lacunas dos osteócitos), resultado da anóxia dos osteócitos (**Goldberg**). Especialmente na face do enxerto ósseo que está em contato com o leito receptor, alguma quantidade de células do enxerto ósseo permanecem vivas e com capacidade de neoformação óssea no leito receptor (osteogênese), cita (**Yano et al, 2015, Pereira e Costa, 2017 - o primeiro artigo da INP**).

2ª semana

Atividade osteoclástica





- AI : Anastomose intraóssea
- AE : Anastomose extraóssea
- AASA : Arteria alveolar superoanterior
- AASP : Arteria alveolar superoposterior
- AIO : Arteria infraorbital

Volume 409 - Number 7 - March 2017

ANALYTICAL & BIOANALYTICAL CHEMISTRY

Should students be graded on accuracy and precision?
 Identifying known unknowns using the CompTox Chemistry Dashboard
 Phosphoproteomics of colon cancer metastasis
 Major phytopathogens and strains from cocoa (*Theobroma cacao* L.)

Springer

Volume 13 | Number 10 | October 2017 | Pages 1915–2184

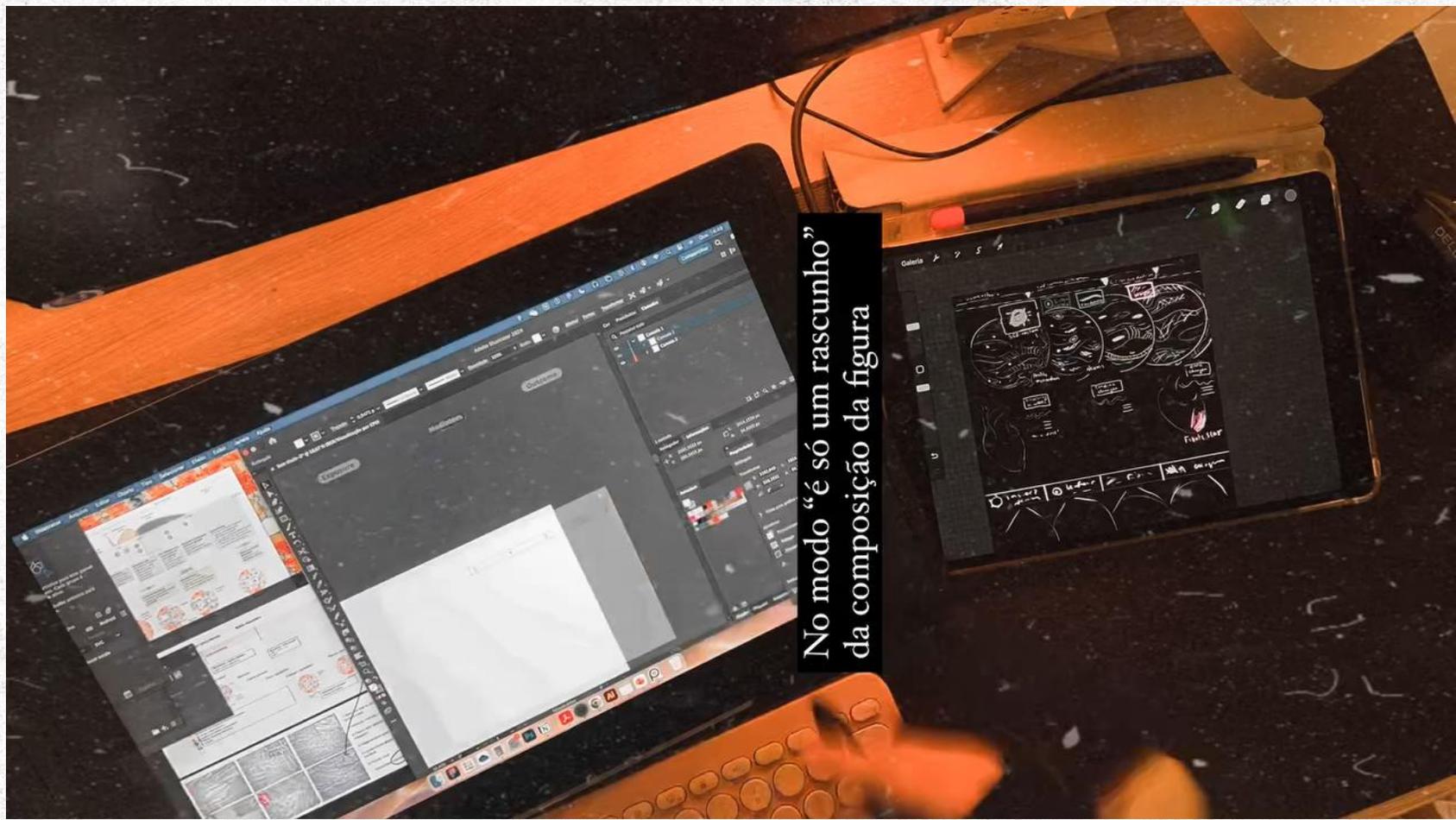
Molecular BioSystems

Interfacing chemical biology with the -omic sciences and systems biology
rsc.li/molecular-biosystems

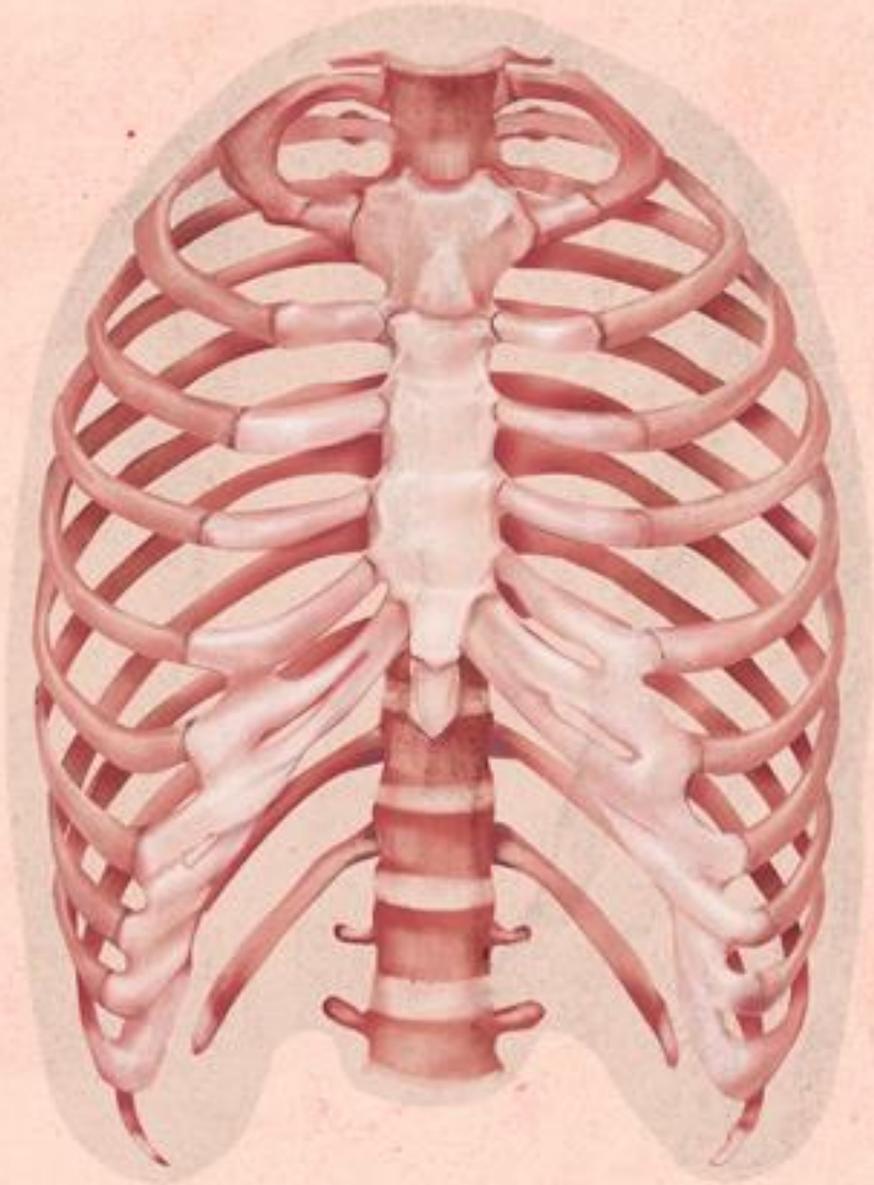
ISSN 1742-2051

PAPER
 D. F. O. Rocha *et al.*
 MALDI MS imaging investigation of the host response to visceral leishmaniasis

Indexed in Medline!

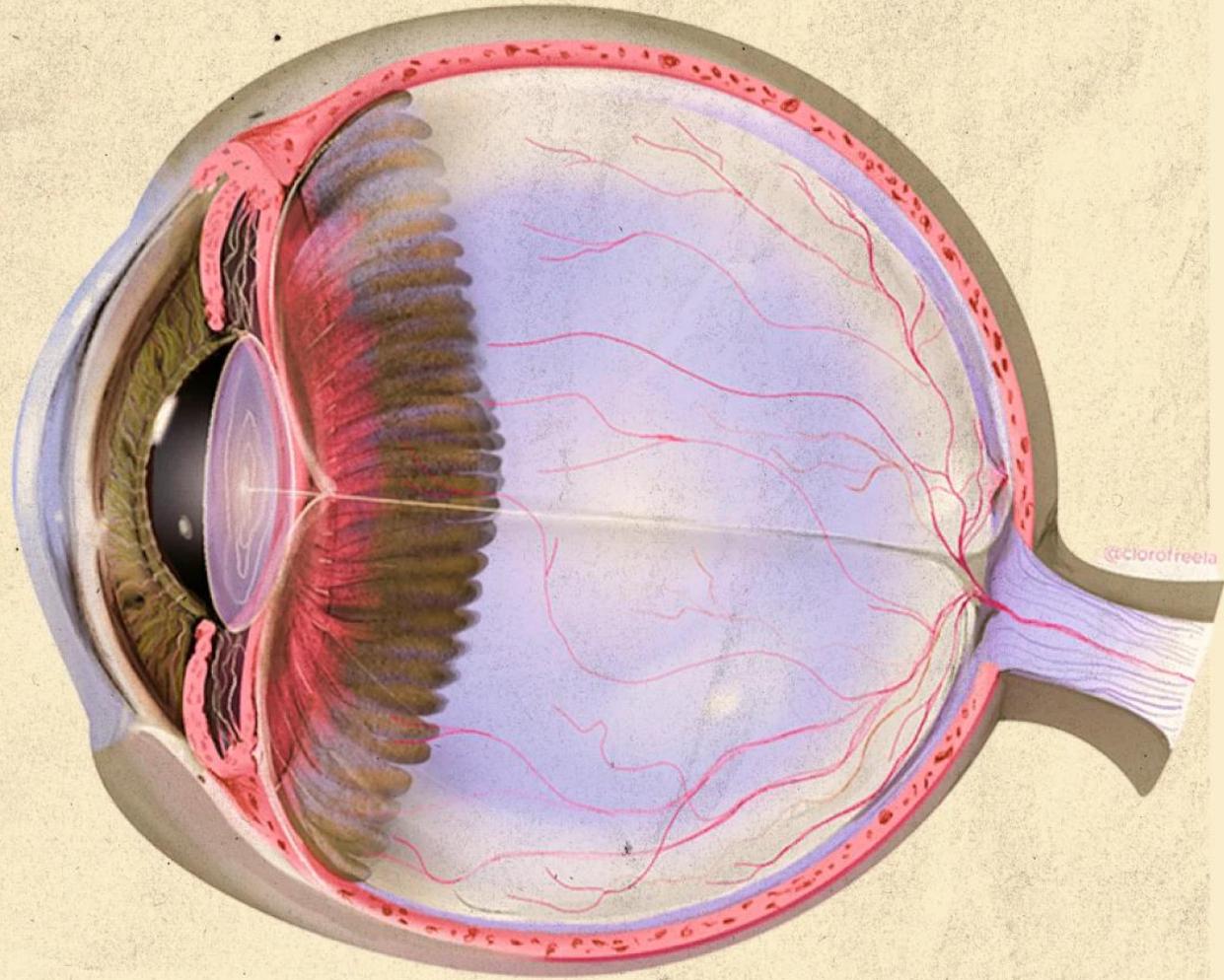


No modo “é só um rascunho”
da composição da figura



29/07/2025

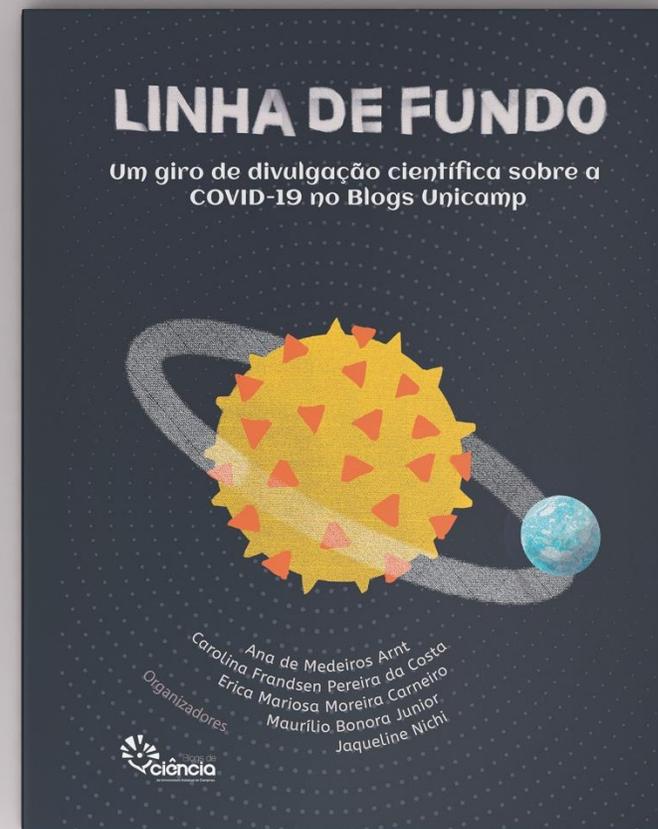
@clorofreela



@clorofreela



**Blogs
Unicamp**



#VOU VACINAR



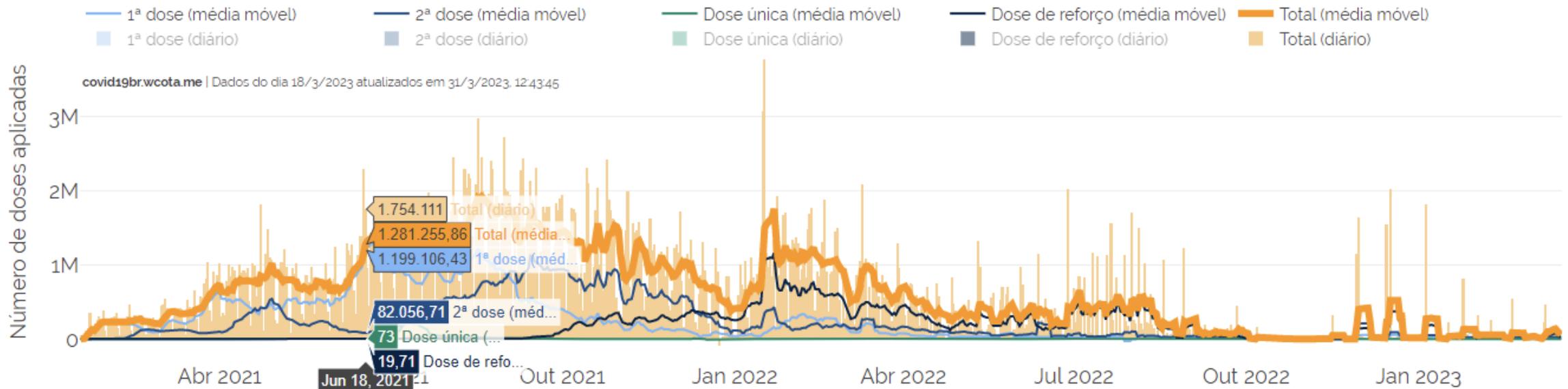
QUANDO AS
CRIANÇAS DEVEM
SER VACINADAS
CONTRA A **Pólio**?



Se perdeu algum desses prazos, busque a Unidade Básica de Saúde mais próxima para atualizar a caderneta de vacinação da criança e receber orientações sobre o período mais adequado para a dose seguinte.

Painel Monitoramento do número de casos de COVID-19 no Brasil (wcota.me), para representar um retrato da cobertura vacinal em junho de 2021.

COVID-19 no Brasil (Vacinação) - média móvel



19/06/21 | 21:50

Dados:
covid19br.wcota.me/#vacinados

SE O BRASIL



TIVESSE SÓ

100

pessoas ...



30

Estariam vacinadas

63,59 milhões



@clorofreia

19/06/21 | 21:50

Dados:
covid19br.wcota.me/#vacinados

SE O BRASIL



TIVESSE SÓ

100

pessoas ...



1

2

Tomaram as duas doses = 24,44 milhões



@clorofreia

19/06/21 | 21:50

Dados:
covid19brwcota.me/#vacinados

SE O BRASIL



TIVESSE SÓ

100

pessoas ...



8

8

Estão desprotegidas

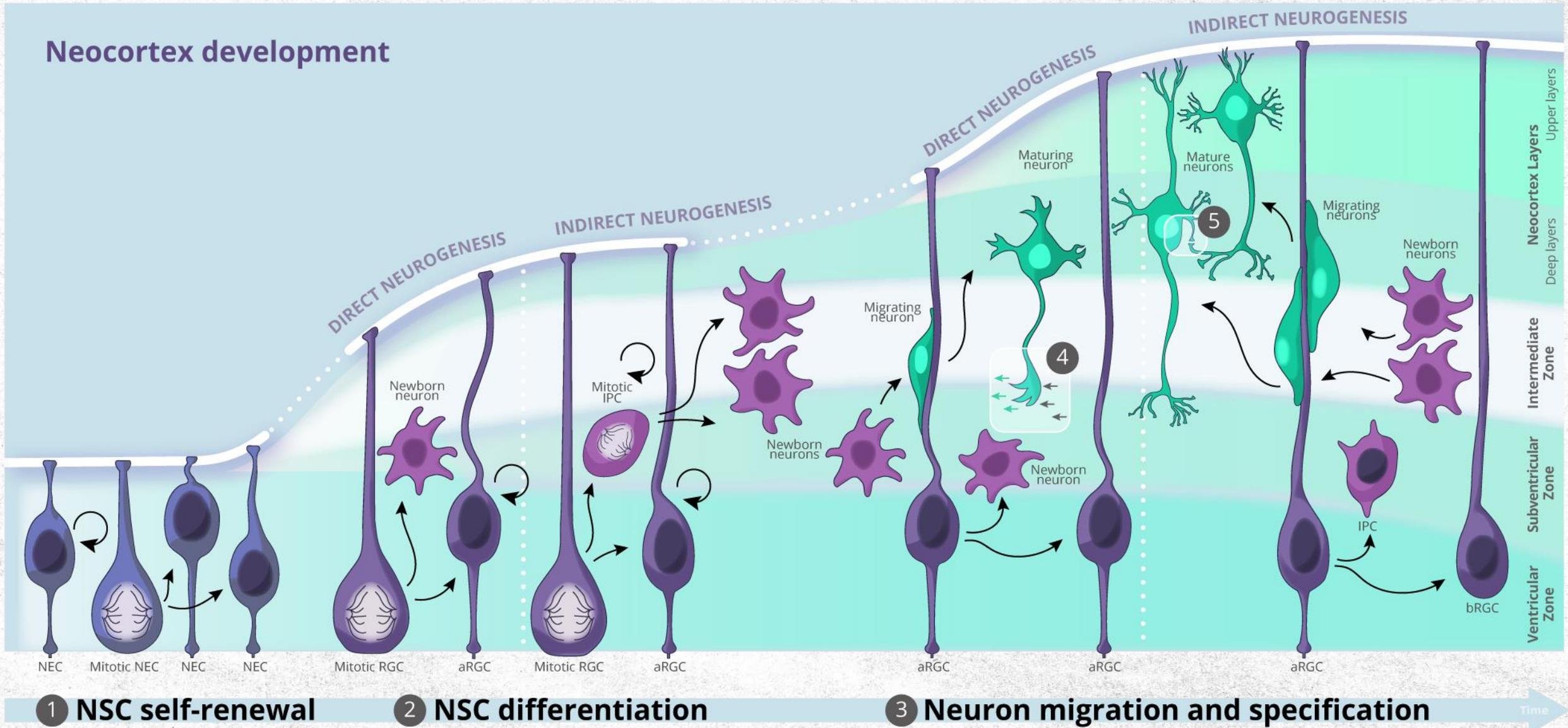
= 187,31 milhões

↳ e não "apenas"
70 não vacinados
= (148,20 milhões)



@clorofrelax

Neocortex development

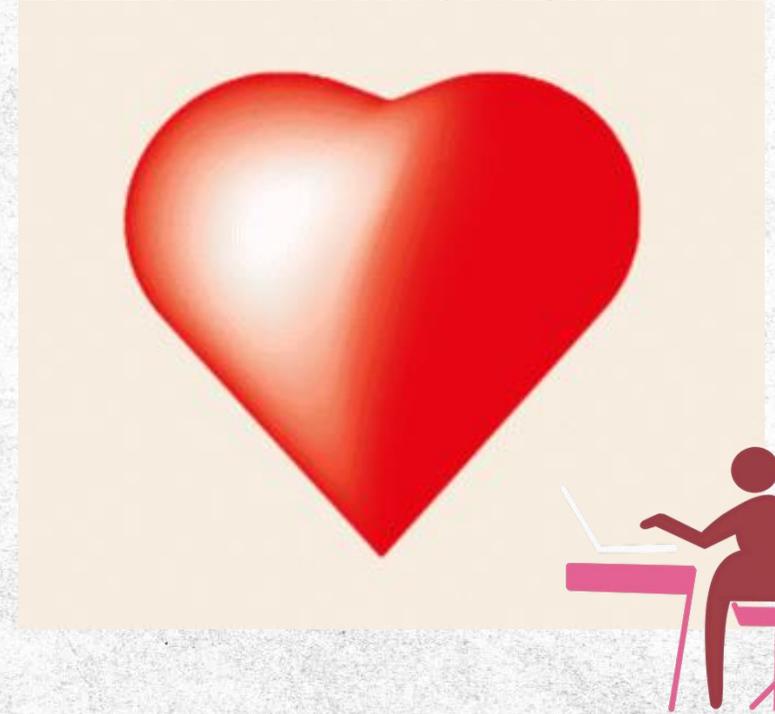
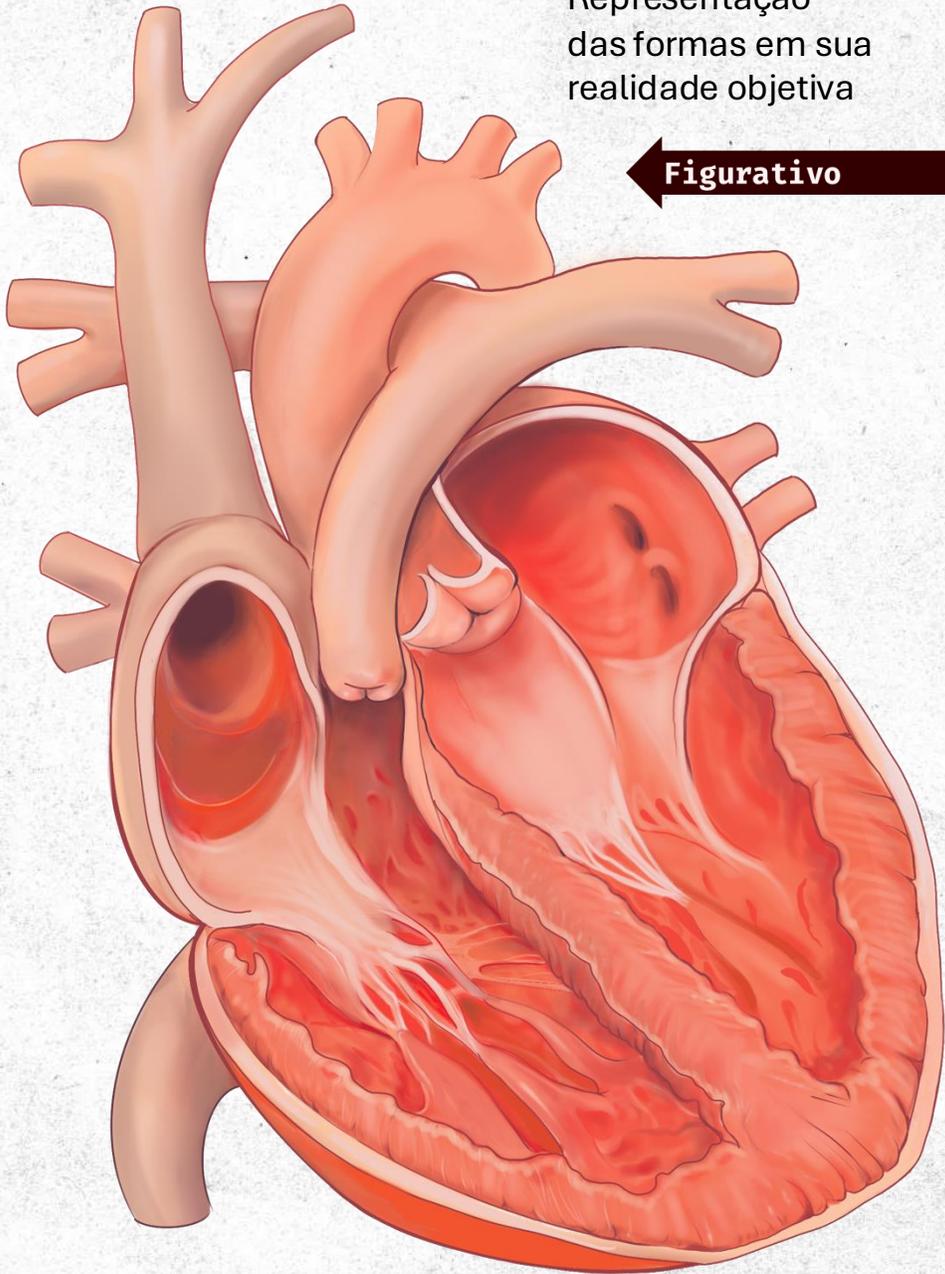


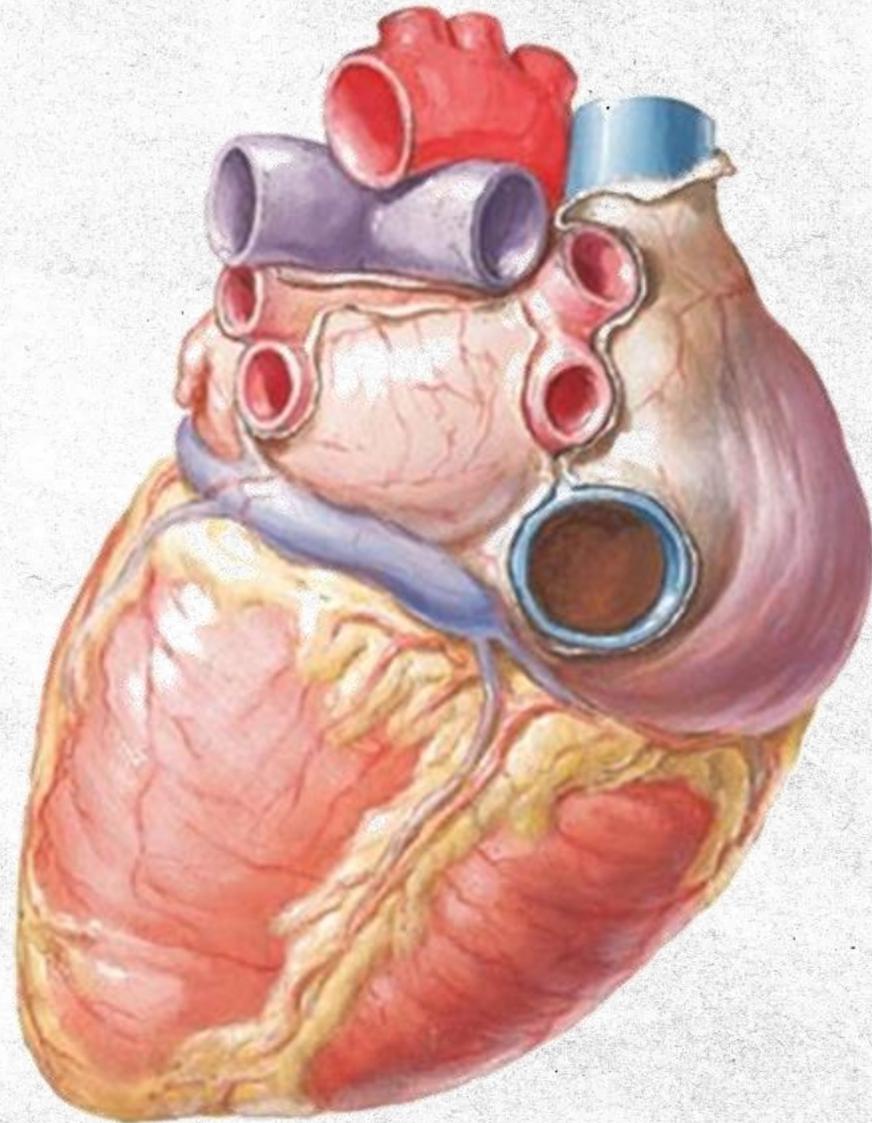
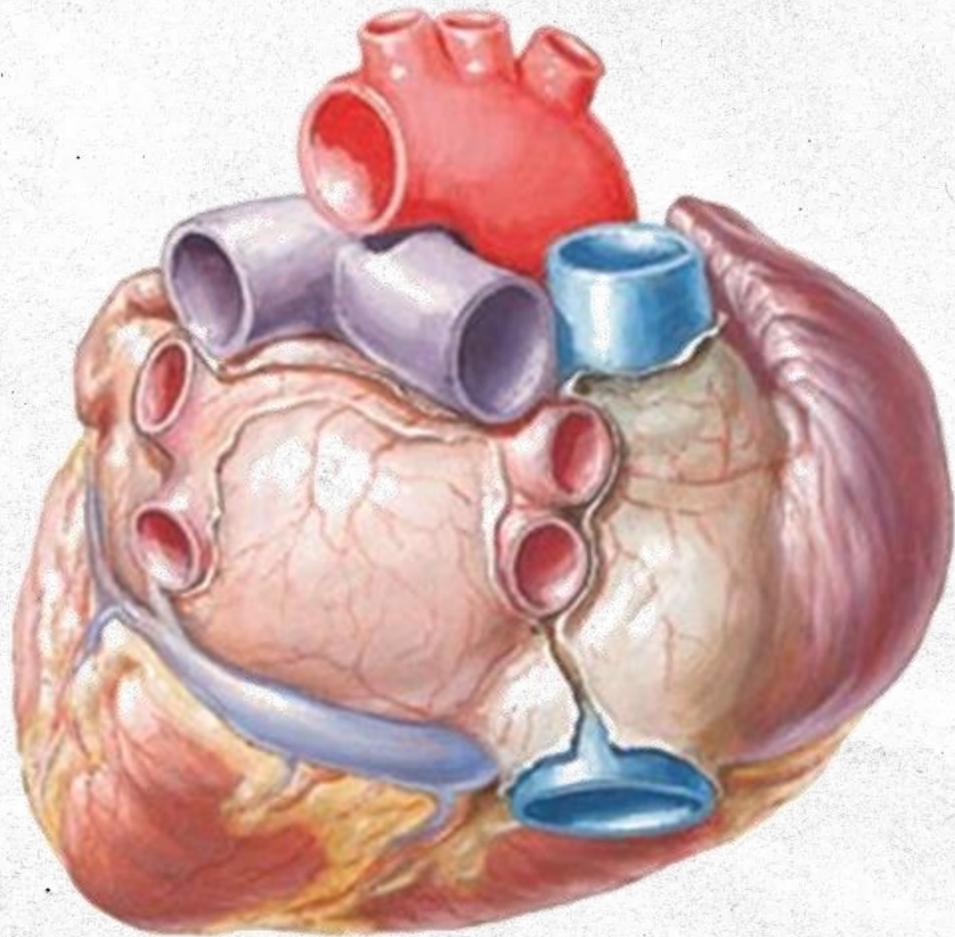
Representação
das formas em sua
realidade objetiva

Rompimento da figura,
sintetizada em cores e
formas

← **Figurativo**

Abstrato →

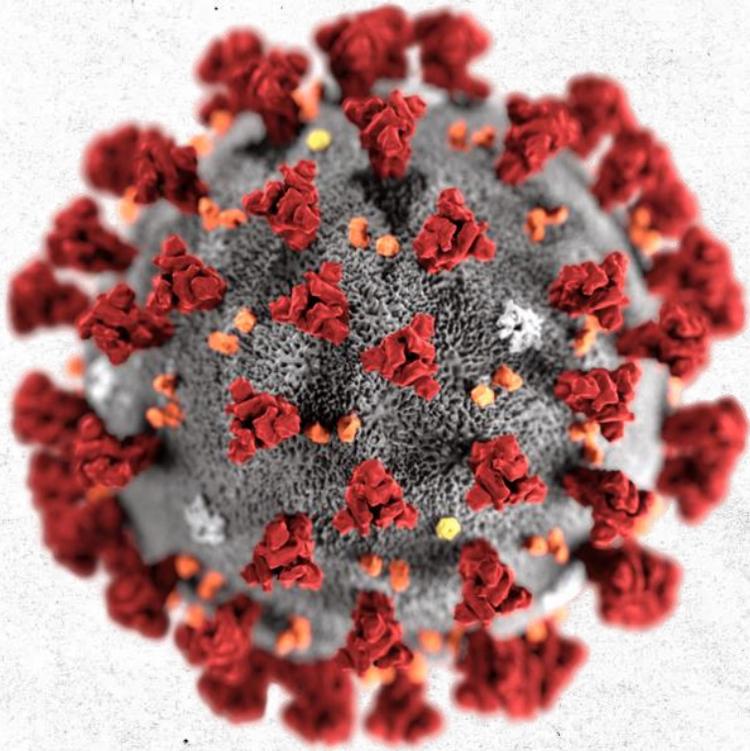




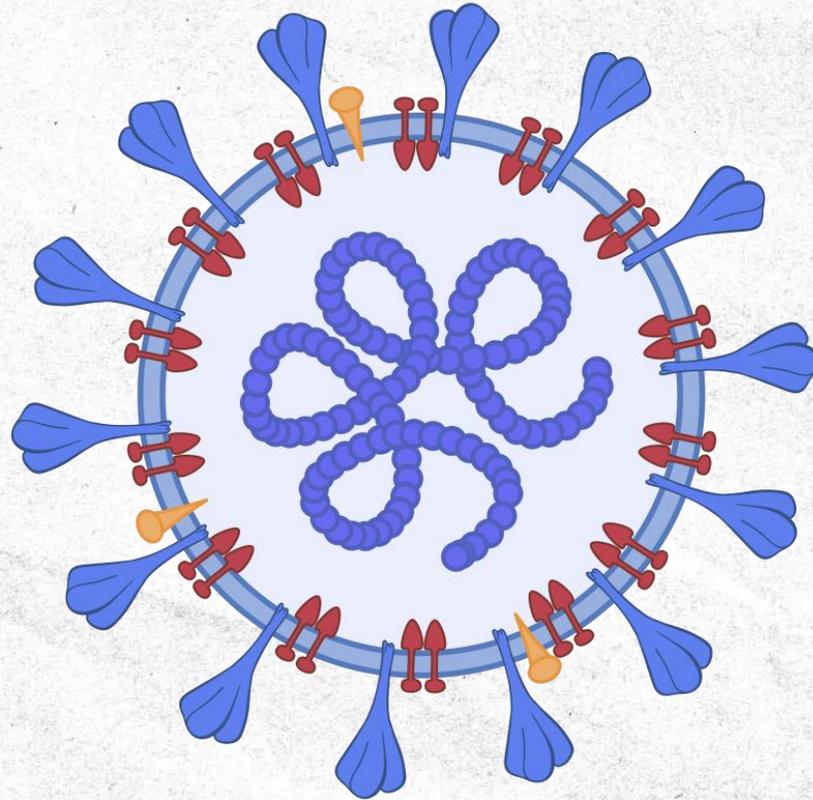
F. Netter
M.D.
© ION

Frank H. Netter

FINALIDADE | MENSAGEM | PÚBLICO-ALVO | VEICULAÇÃO | CAPACIDADE TÉCNICA



Alissa Eckert, MS; Dan Higgins, MAM

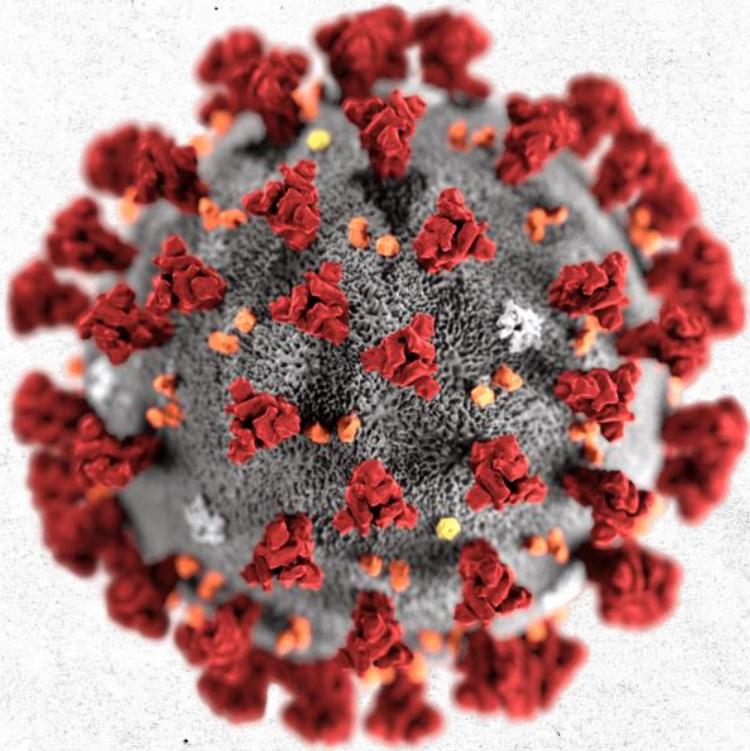


Hanna Vega

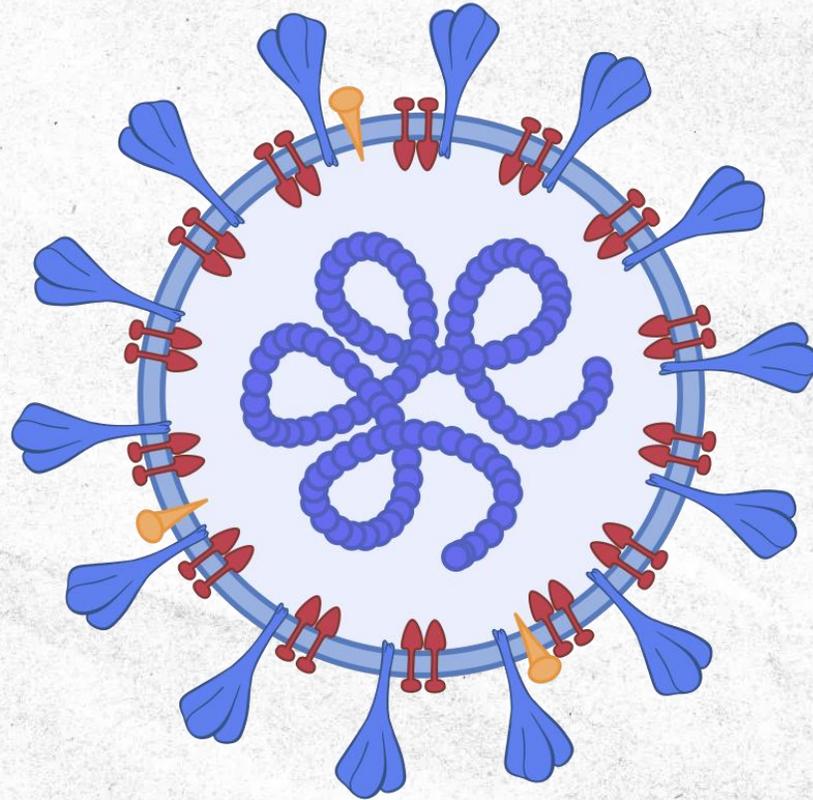


David S. Goodsell

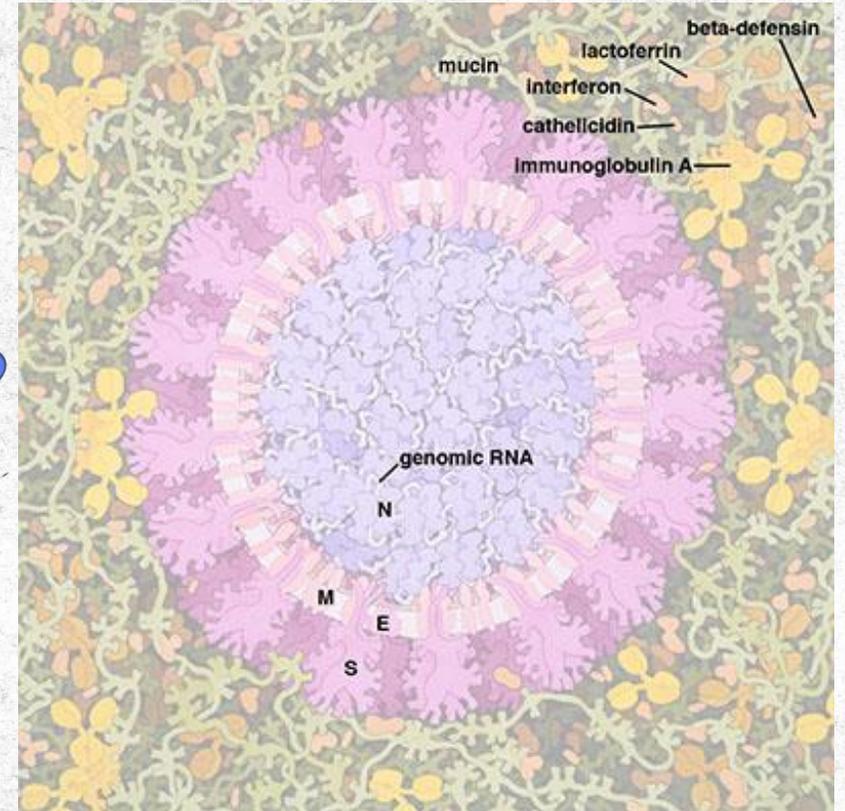
FINALIDADE | MENSAGEM | PÚBLICO-ALVO | VEICULAÇÃO | CAPACIDADE TÉCNICA



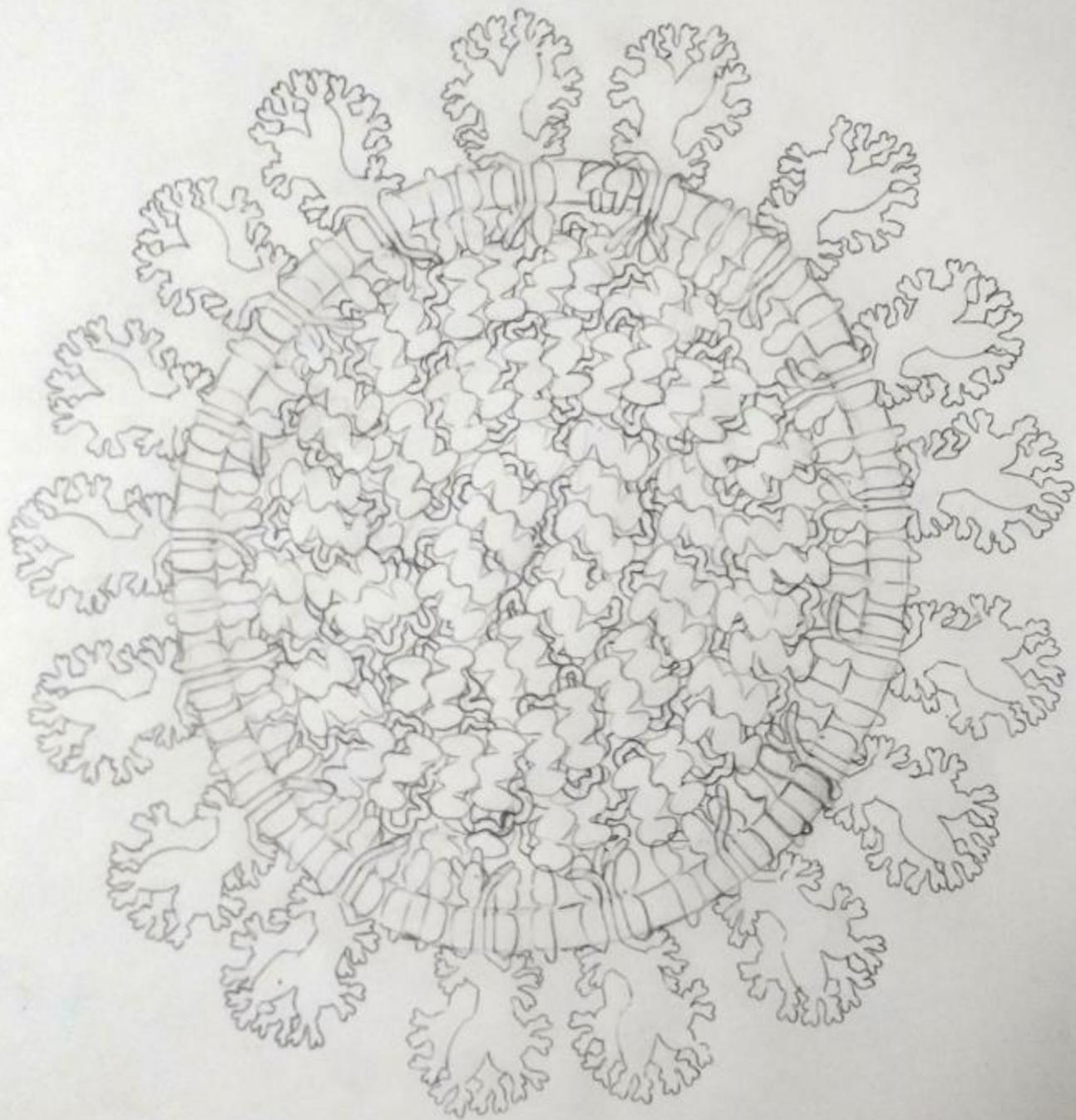
Alissa Eckert, MS; Dan Higgins, MAM

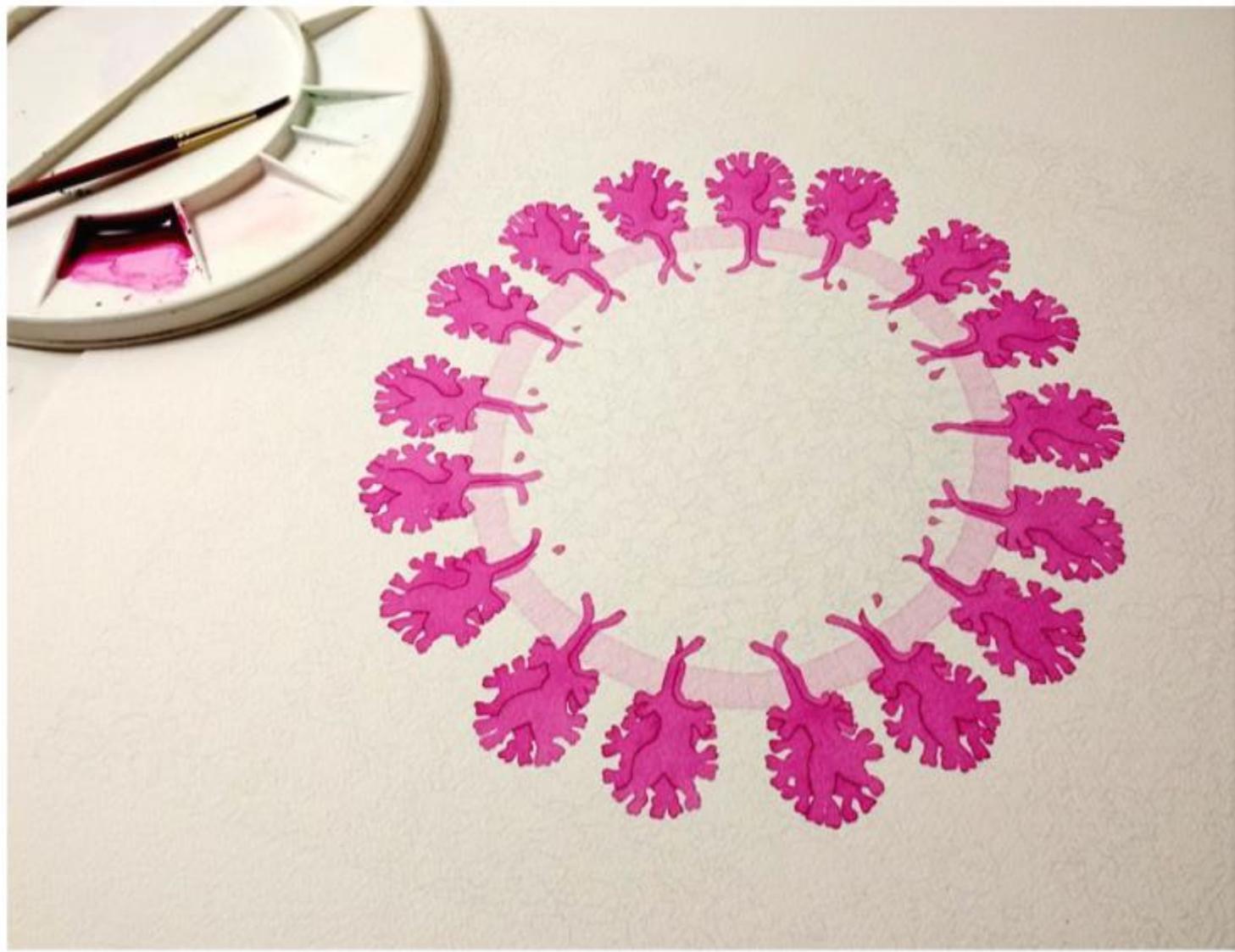


Hanna Vega



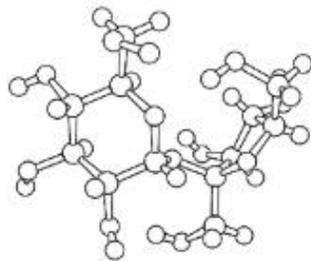
David S. Goodsell



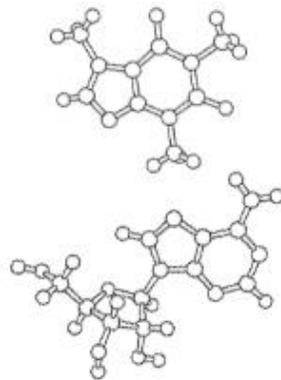




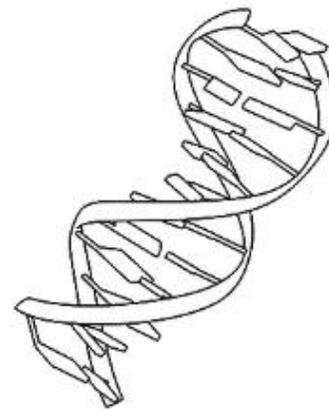
Electron Density



Sucrose



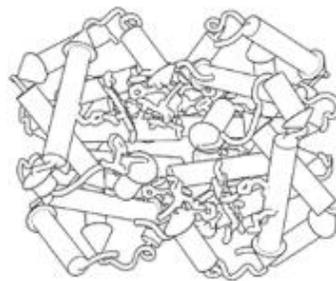
Caffeine and Adenosine



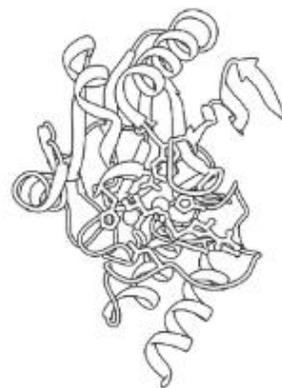
DNA



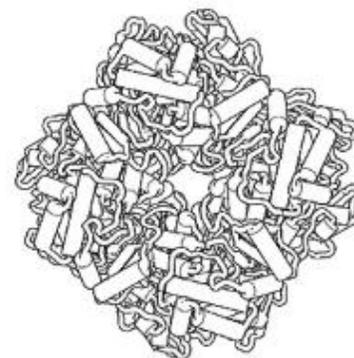
Insulin



Hemoglobin



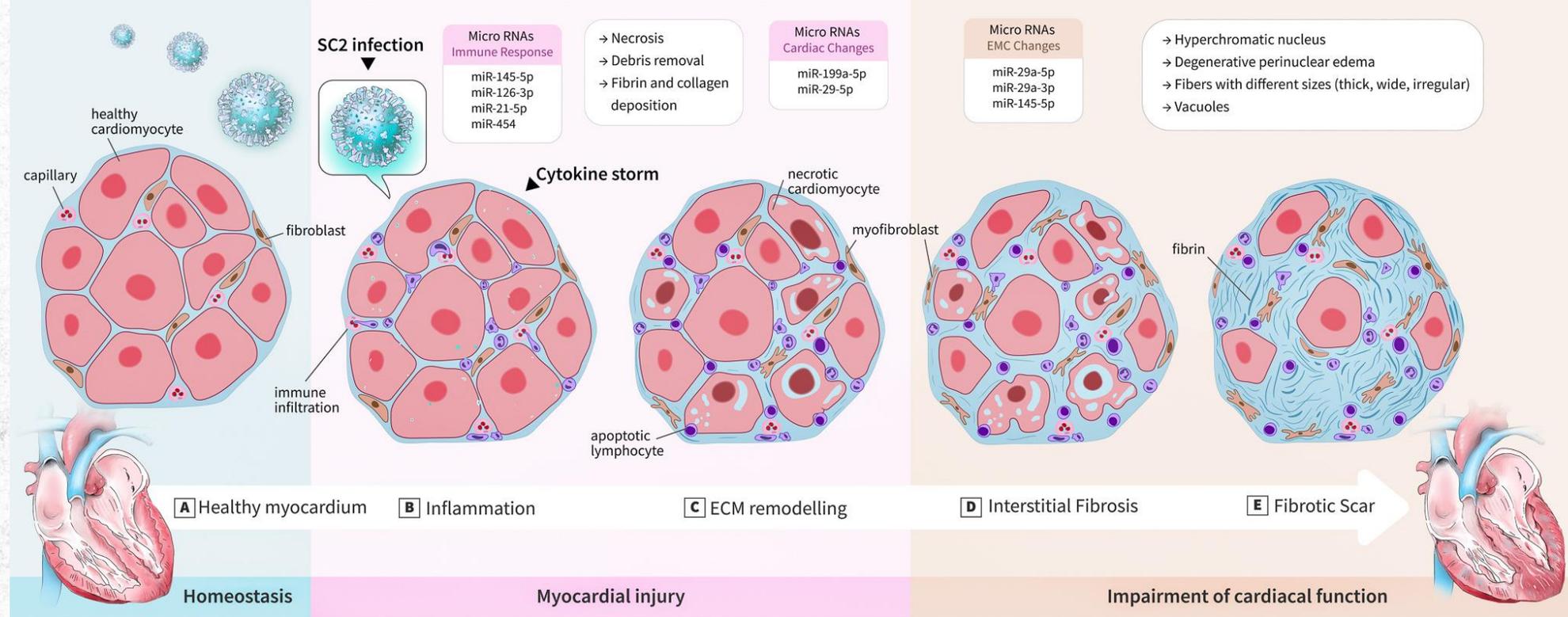
New Delhi Metallo-Beta-Lactamase



Rubisco

Requisitos gerais para ilustrações de periódicos e livros científicos

Software de ilustração digital/ tipo de imagem produzida/ técnica de pintura



A ferramenta não faz diferença, se a figura atender aos requisitos básicos:

Consistência

Foco

Clareza e simplicidade

Eficácia visual

Credibilidade

ESTILOS DE DESENHO

- 1
- 2
- 3
- 4

Figurativo

Estilizado

Cartoon

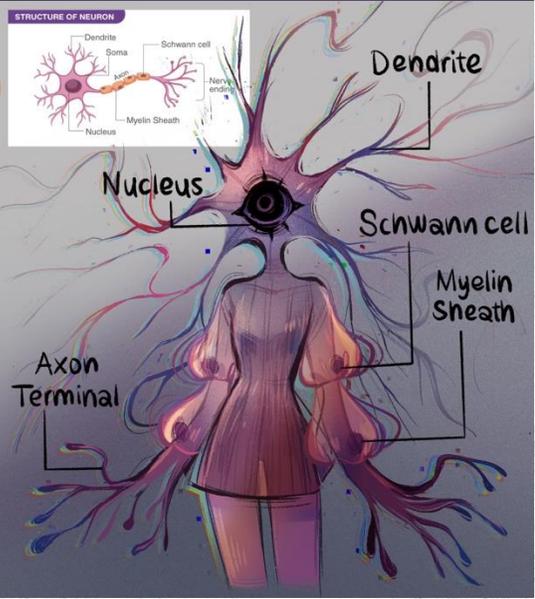
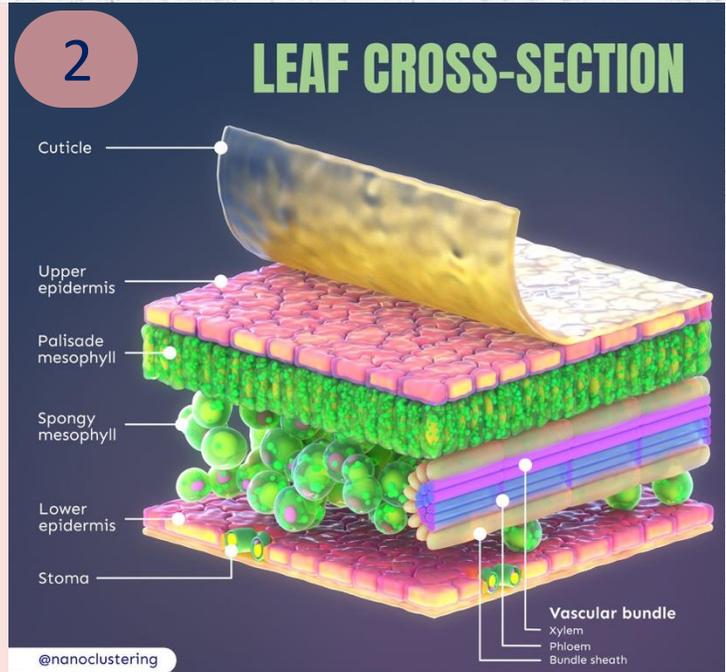
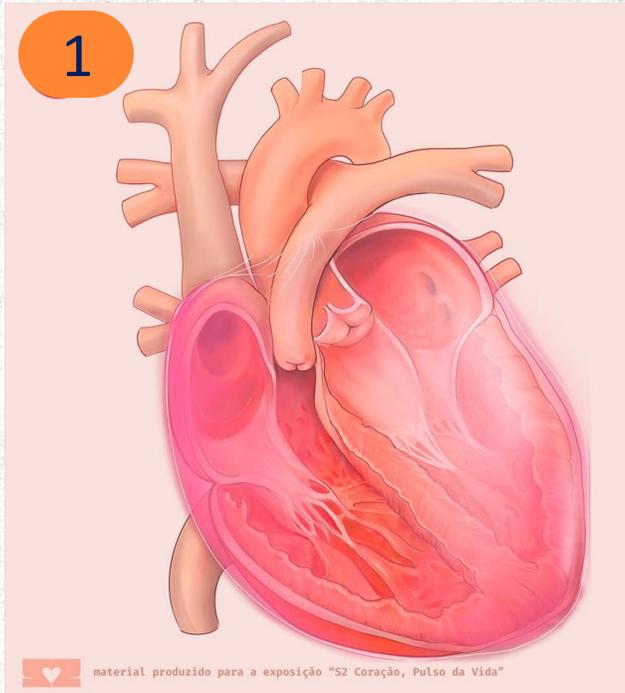
Pixel art

Isométrico

2D

3D

✓	✓		✓
		✓	✓
		✓	
	✓		
		✓	✓
✓	✓		



elementos visuais

Ponto

linha

plano volume

cor

luz

formas

texturas



calma

elementos visuais

Ponto

linha

plano volume

cor

luz

formas

texturas



Pós graduações em Ilustração Científica

UK

Medical Art MSc | University of Dundee

Medical Visualisation and Human Anatomy
University of Glasgow

Art and Science – University of the Arts London (UAL)

Suécia

Master Program Visual Communication
Konstfack University of Arts, Craft and Design

PT

Curso de Formação em Ilustração Científica / CFIC
“especialização” da Universidade de Aveiro, para portadores de diploma

Curso de Ilustração Científica (Ciências Naturais)

Holanda

MS Scientific Illustration
Zuyd University of Applied Sciences

Pós graduações em Ilustração Científica

Canadá

Master of Science in Biomedical Communications

University of Toronto

EUA

Medical and Biological Illustration (MBI)

Johns Hopkins University

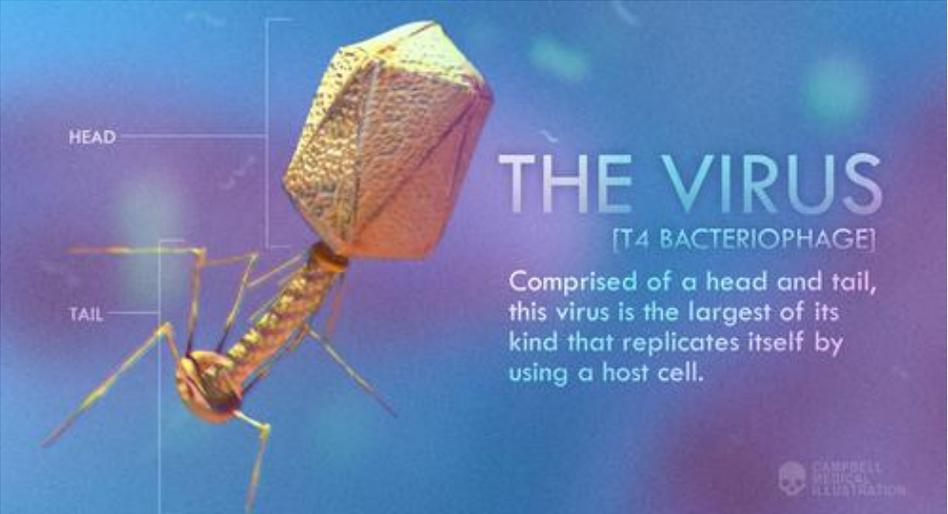
MS in Biomedical Visualization (BVIS) Program

University of Illinois at Chicago

MS in Medical Illustration offered by the College of Allied Health Sciences

Augusta University

Autoria: [Annie campbell @nowmedstudios](#)

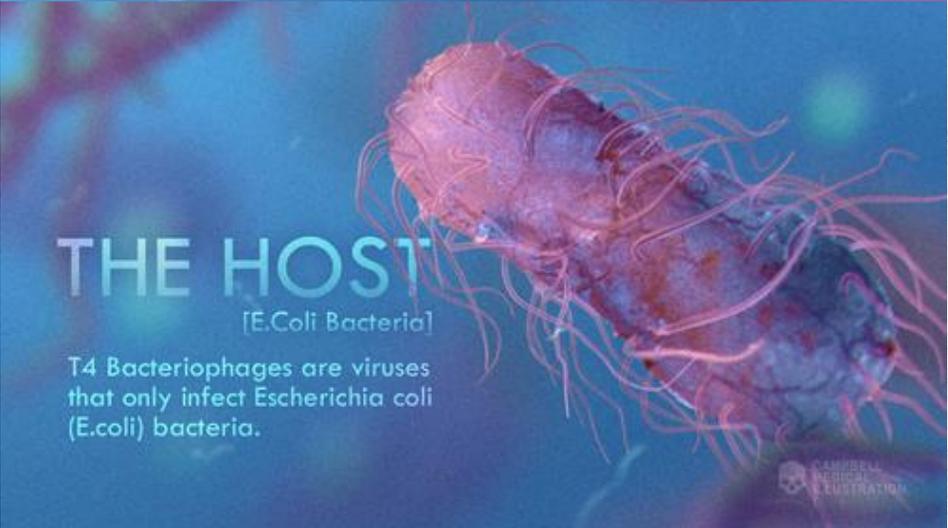


THE VIRUS

[T4 BACTERIOPHAGE]

Comprised of a head and tail, this virus is the largest of its kind that replicates itself by using a host cell.

CAMPBELL MEDICAL ILLUSTRATION



THE HOST

[E.Coli Bacteria]

T4 Bacteriophages are viruses that only infect Escherichia coli (E.coli) bacteria.

CAMPBELL MEDICAL ILLUSTRATION



T4 Bacteriophage and E.Coli — Campbell Medical Illustration

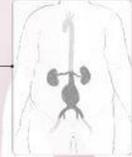
CAMPBELL MEDICAL ILLUSTRATION



ABDOMINAL AORTIC ANEURYSM

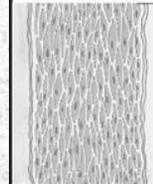
Abdominal Aortic Aneurysms or AAAs are a local representation of a systemic disease process that usually manifests as a tortuosity or permanent dilation of the aorta that exceeds the normal diameter by 50%. AAAs are typically found in the abdominal region and common iliac arteries.

Unfortunately, AAA is usually asymptomatic but can be readily diagnosed using imaging such as ultrasound and treated with surgical intervention. However, if left untreated, the aortic wall becomes weak and is unable to withstand normal blood pressure, which leads to further dilation and potential rupture. In the event of a rupture, the mortality rate increases to an alarming 80-90%. Although the cause of AAA is multifactorial, the disease has been linked to hypertension, atherosclerosis, smoking, high cholesterol, emphysema, obesity, age (>50 years), sex (Males > females), and family history.



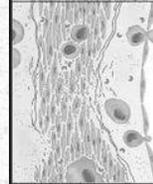
DISEASE PROGRESSION

Although certain aspects of AAA pathogenesis remain uncertain, proteolysis, inflammation, vascular smooth muscle cell (VSMC) apoptosis, oxidative stress, elastin degradation and extracellular matrix degradation are frequently reported in current literature.



1 NORMAL AORTIC WALL

The normal aortic wall is composed of three layers. The innermost layer, tunica intima, is composed of a thin layer of endothelium. The middle layer, tunica media, is composed of concentric and overlapping elastic lamellae. The outer layer, tunica adventitia, is composed of loose connective tissue.



2 WEAKENING OF THE AORTIC WALL

In AAA, there is a reduction in the number of elastic lamellae and an increase in the number of VSMCs. The weakening of the aortic wall is primarily due to the degradation of the extracellular matrix (ECM) by proteolytic enzymes such as matrix metalloproteinases (MMPs). This leads to a loss of structural integrity and a thinning of the aortic wall.



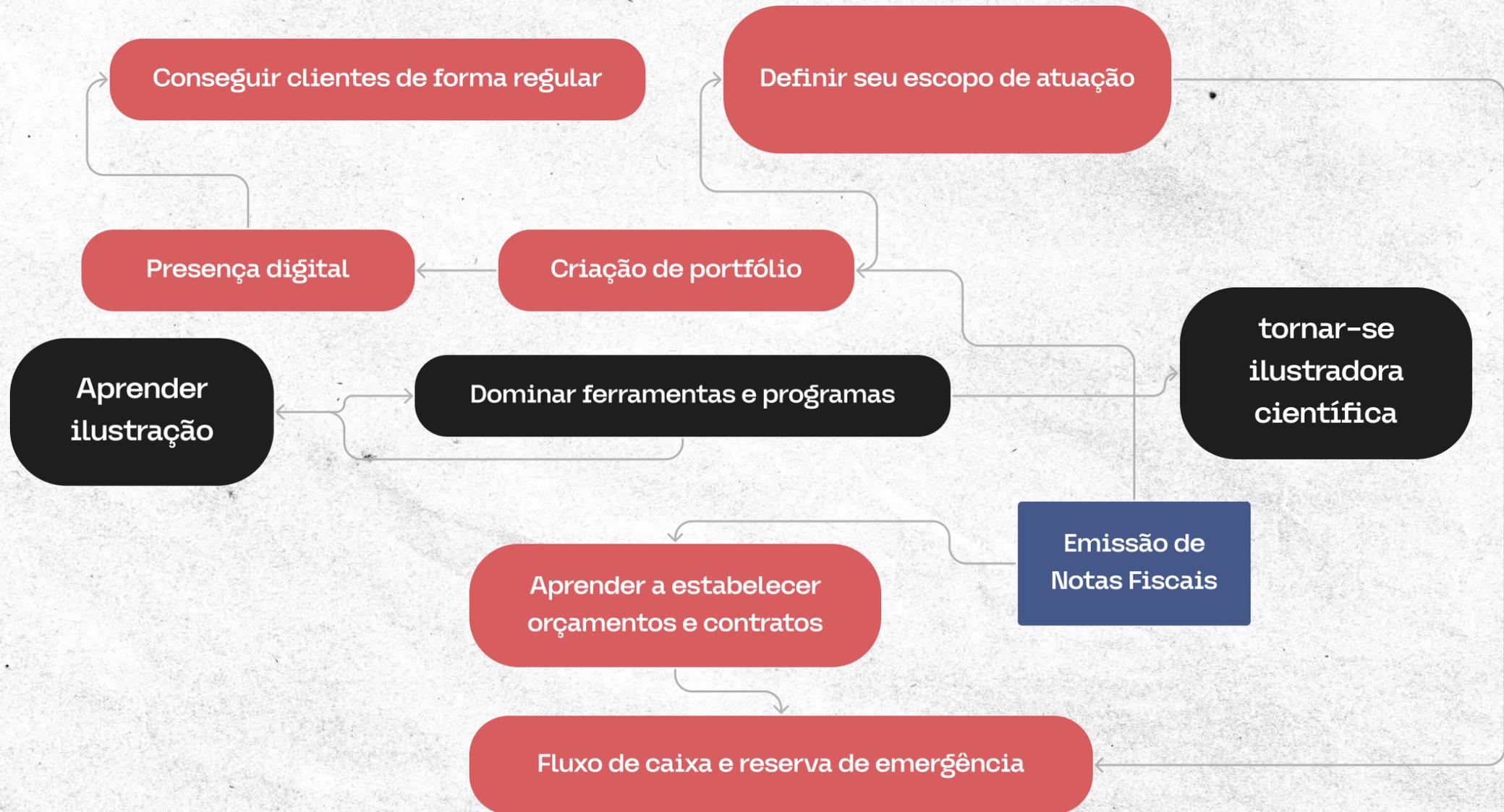
3 RUPTURE OF THE AORTIC WALL

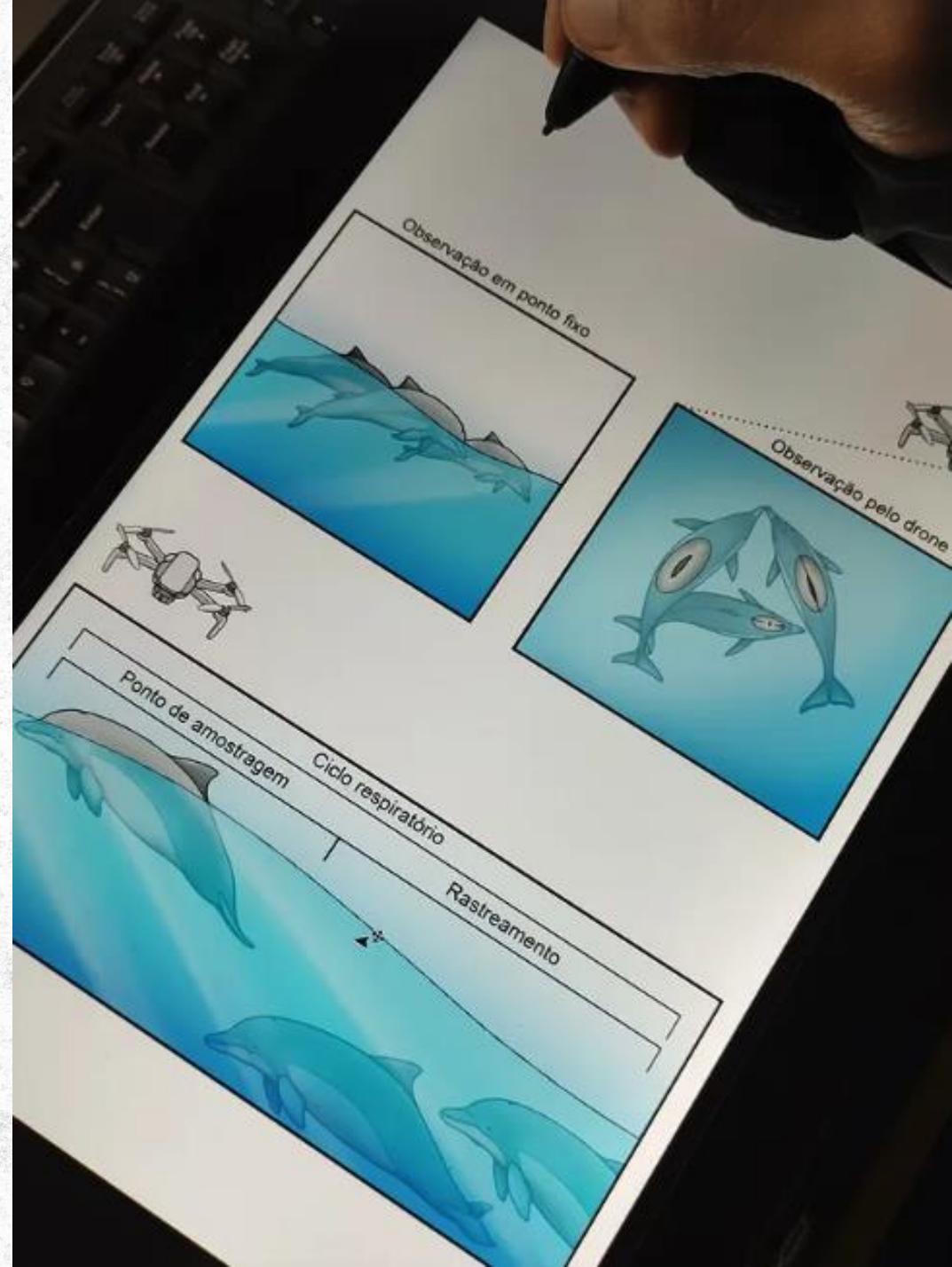
The progression of AAA leads to the pathological weakening and rupture of the aortic wall. This is often accompanied by the formation of a false aneurysm, which is a collection of blood that has leaked out of the aorta and is contained by the surrounding tissue.

LEGEND PLACEHOLDER

@shehryar.visuals

Profissionalização

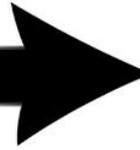




Past

Present

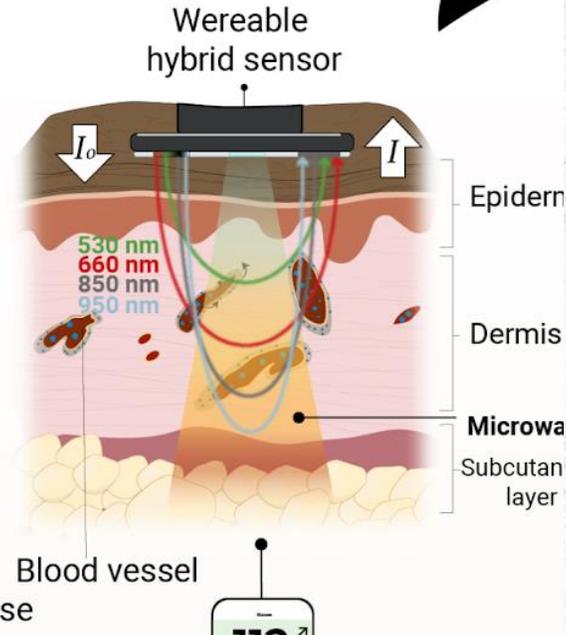
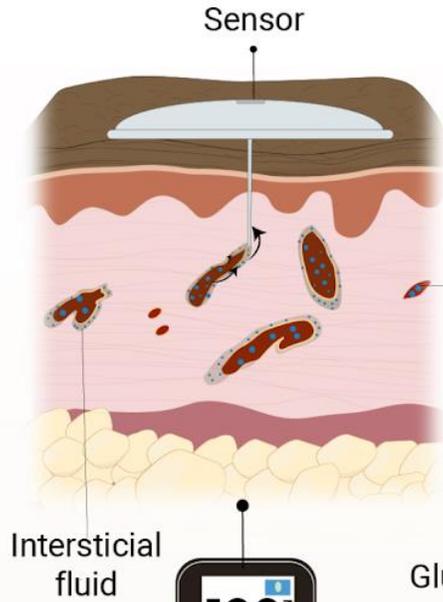
Future



Digital glucometer



Blood

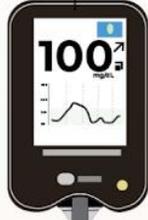


Interstitial fluid

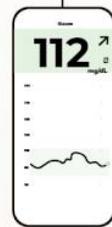
Glucose

Blood vessel

Handheld device



Smartphone



Sensor

wearable sensor

CARACTERÍSTICAS



BARBILHÕES

Sua função é sensorial, o peixe consegue sentir o ambiente através deles. Como por exemplo, a temperatura da água ou até mesmo suas presas.



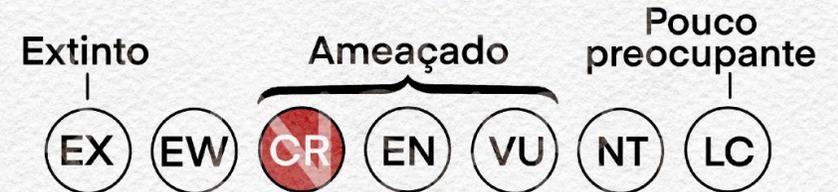
MANCHAS

Suas manchas são sua camuflagem. O Surubim é um peixe de fundo, então elas simulam o leito do rio, protegendo-o de predadores.

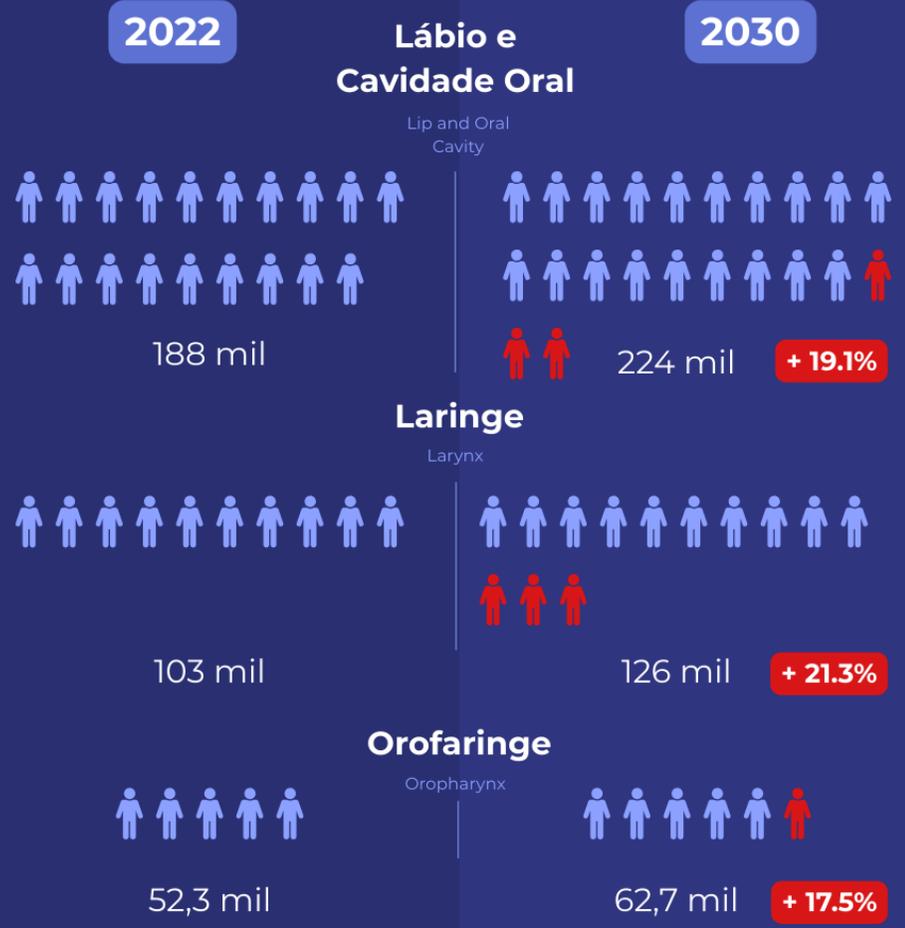


@JULIAMARTINSART

Surubim-do-Doce



Número estimado de **mortes**, de 2022 a 2030
Ambos os sexos | Idade [0 - 85+]



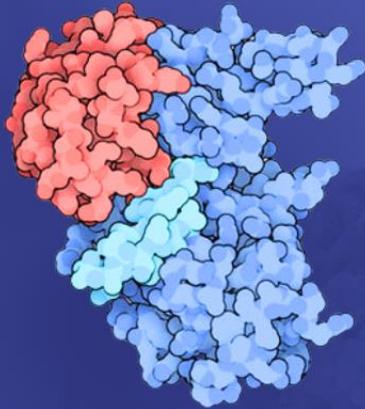
Africa + Latin America and the Caribbean + Northern America + Europe + Oceania + Asia

Detectando
cânceres de
orofaringe
HPV-positivos
na prática clínica

Imunohistoquímica para p16

p16 IHC

Imunohistoquímica para p16 (P16INK4a)



P16INK4a

A imunohistoquímica para p16 é um método indireto para detecção de HPV em câncer de orofaringe.

David Goodsell, 2019

Immunohistochemistry for p16 is an indirect method for detecting active HPV viral oncogenes.

Vírus HPV



Atualmente, o que é feito em termos de testagem para HPV?



1

Paciente com diagnóstico de câncer de orofaringe tem seu tecido encaminhado para imunohistoquímica de p16

Patient with positive clinical examination for oropharyngeal cancer has tissue sent for p16 testing via IHC

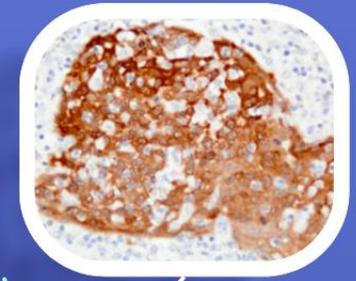


Anticorpos anti-p16

2

Caso o tumor seja p16 positivo, o tecido é então submetido a testagem de DNA

If the tumor is p16 positive, the tissue is then submitted for DNA testing



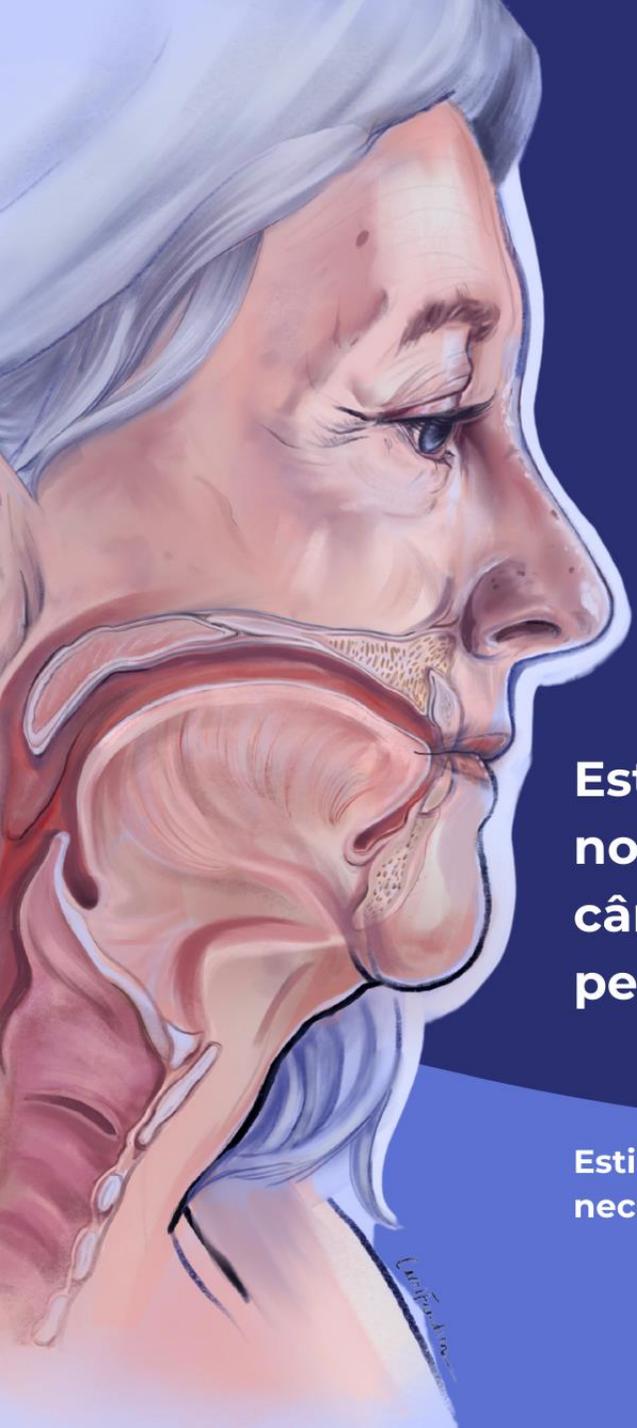
IHC de câncer de orofaringe p16 positivo

3

A testagem verifica se existe DNA viral na amostra, e se o HPV é do tipo 16, 18 ou outro

The test checks for viral DNA in the sample, and if the HPV is type 16, 18 or other



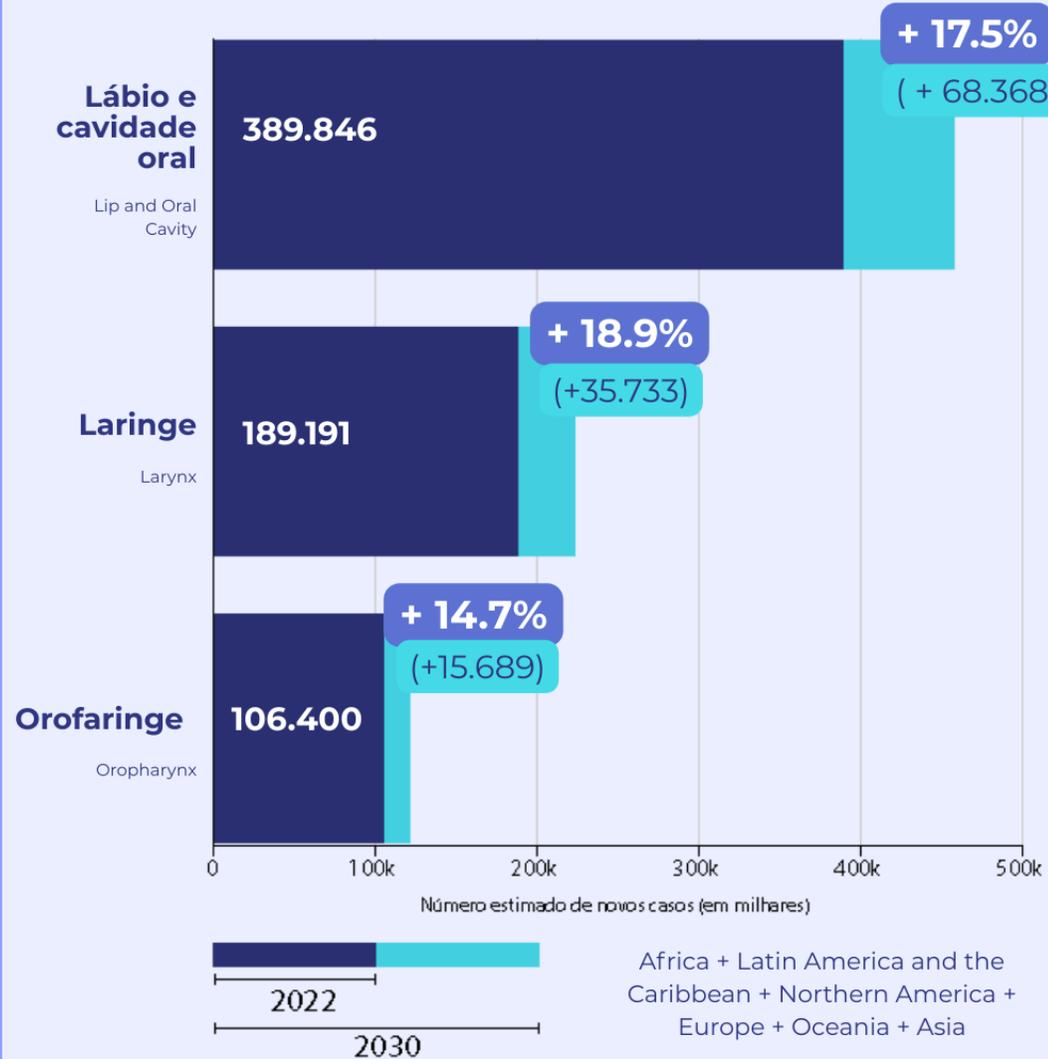


Estimativas de novos casos de câncer de cabeça e pescoço até 2030

Estimates of new head and neck cancer cases by 2030

Número estimado de novos casos, de 2022 a 2030

Ambos os sexos | Idade [0 - 85+]





ANATOMISTA DE TINTA

14 DE JUN.

Como se tornar um Ilustrador Científico?

Por onde começar? Preciso de formação universitária? Que curso fazer? Todas as perguntas respondidas!

Fernanda Sales • 6 MIN READ





10

ilustradoras científicas
para você conhecer



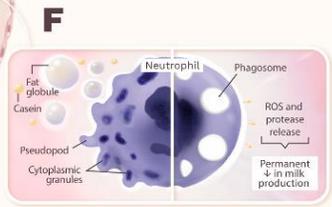
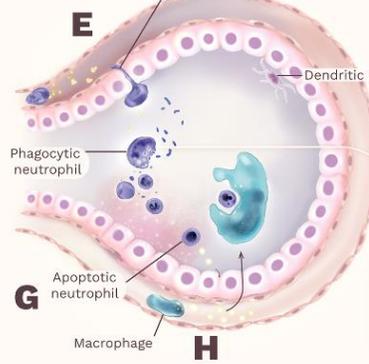
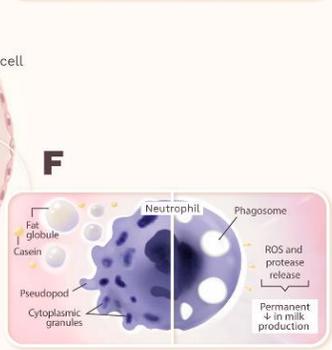
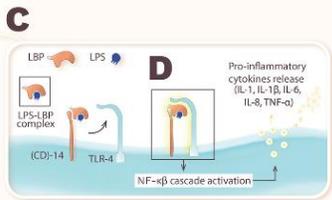
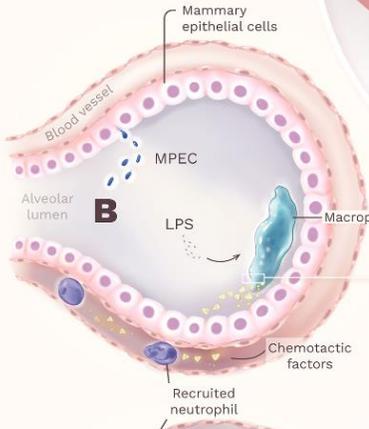
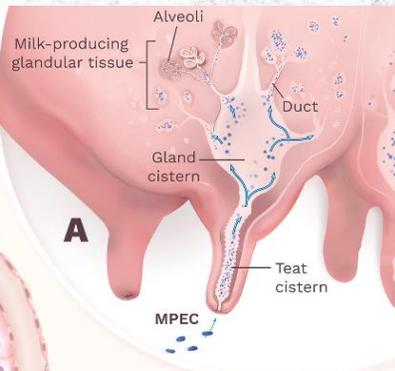
5 DICAS

**pra quem quer trabalhar com
ilustração científica hoje**

1. ✨ Aprenda arte digital
 - ✨ Faça um curso de fundamentos de desenho (fora do contexto da Ilustração Científica)
3. ✨ Abra um CNPJ
4. ✨ Entenda o processo de publicação científica
 - ✨ Lembre-se que a ilustração científica é um processo colaborativo!

<https://clorofreela.com/minhas-dicas-para-quem-quer-trabalhar-com-ilustracao-cientifica/>

MASTITIS MPEC-elicited immune response



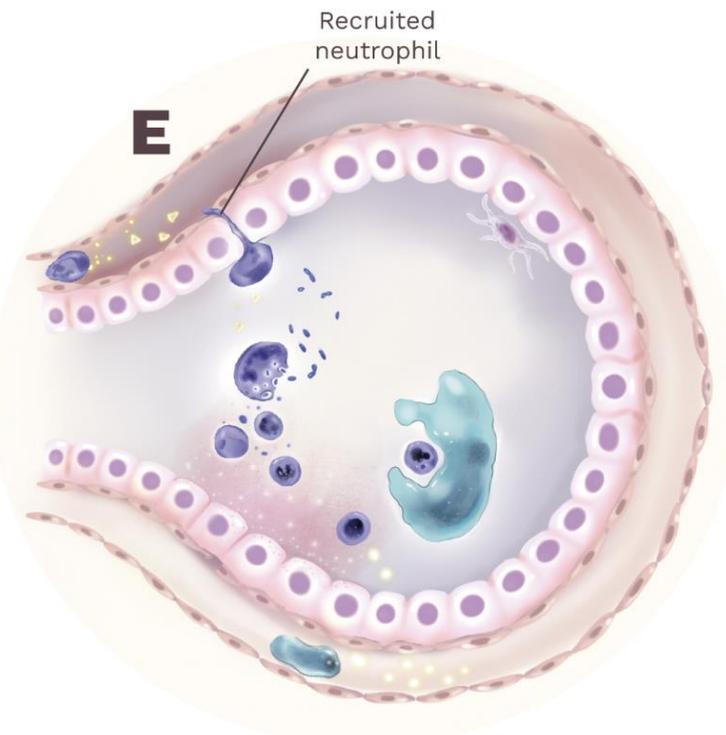
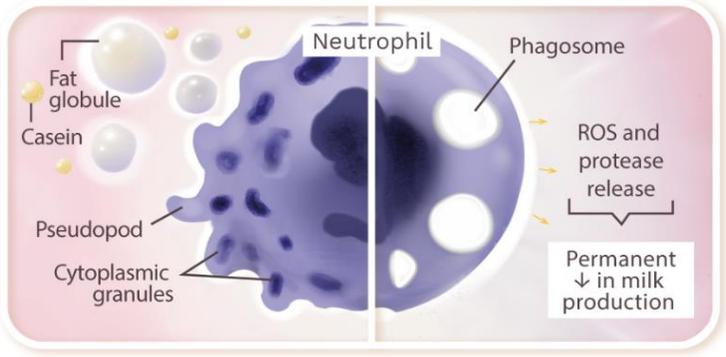
Mercury is released during the amalgamation process, and most of the gaseous mercury is trapped into the surrounding vegetation and subsequently deposited in the soil.

Most of the mercury that reaches the river is transported adsorbed to soil particles. Therefore, activities such as deforestation accelerate the erosion process and, consequently, the deposition of mercury into the rivers.

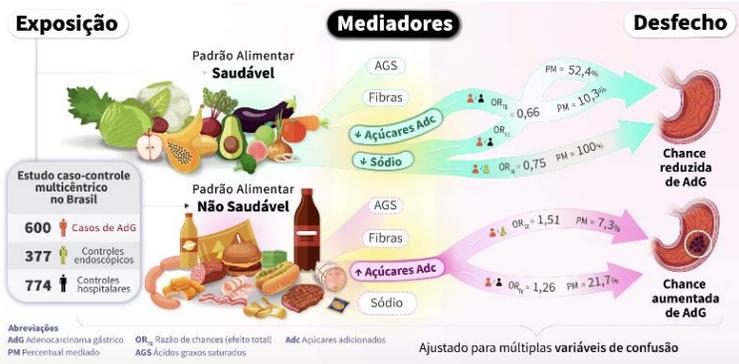
Mercury undergoes sedimentation along watercourses. Under low oxygenation and high organic matter concentrations, particulate mercury transforms into methylmercury, capable of accumulating in the food chain.

Mercury bioaccumulates in the food chain, especially in piscivorous fish. The fish are consumed by local populations, impacting their health.

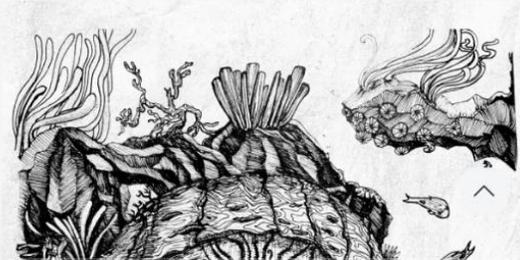
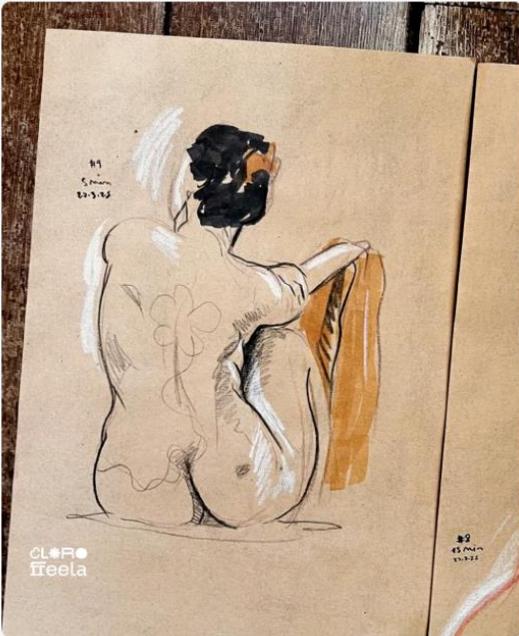
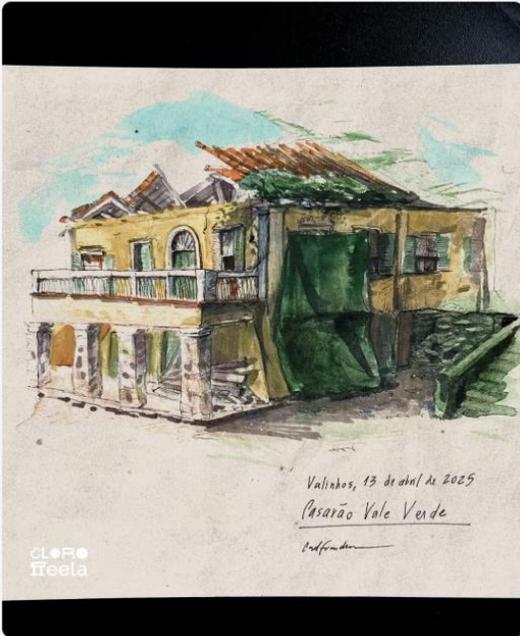
F



@clorofreela_sci



@clorosketch

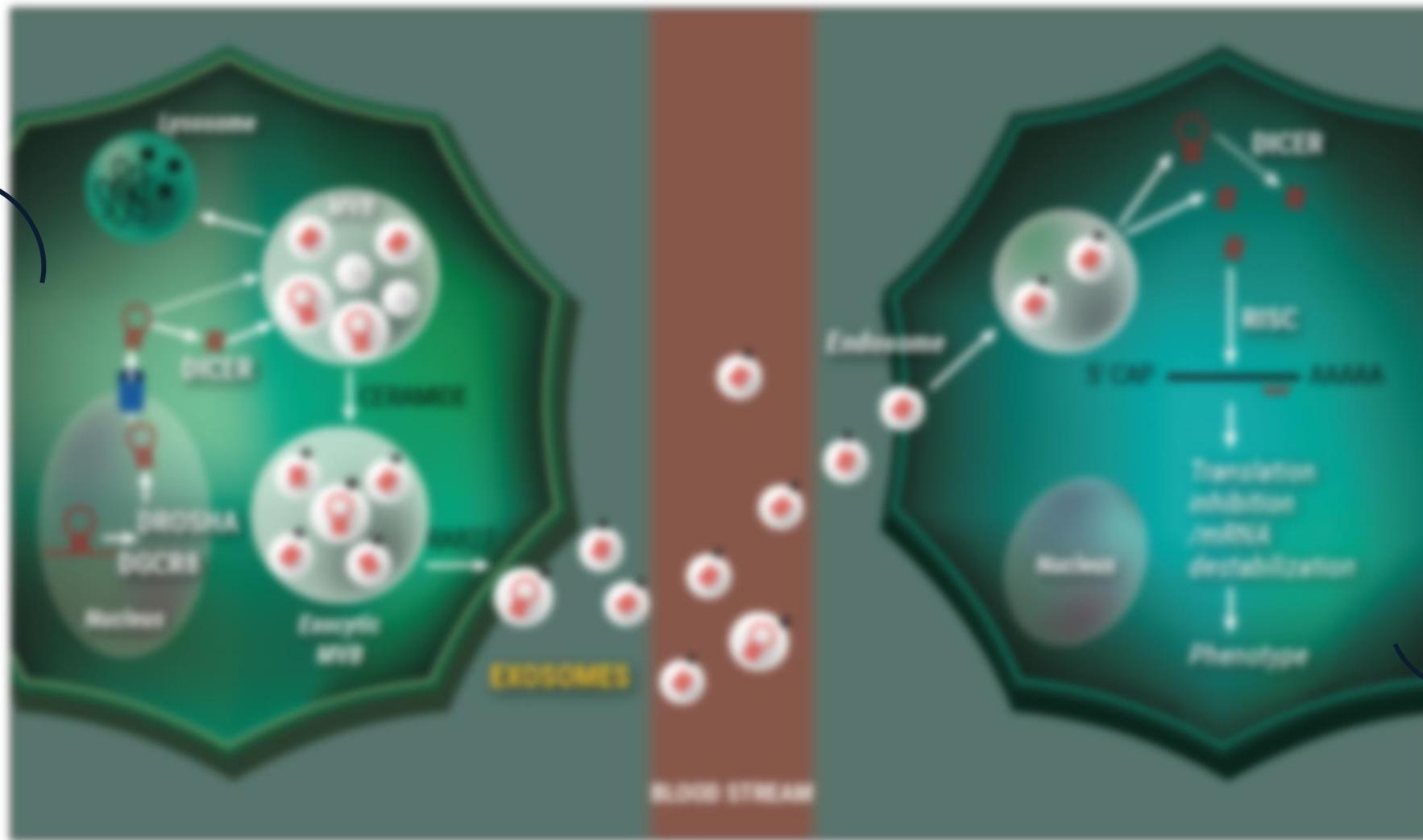
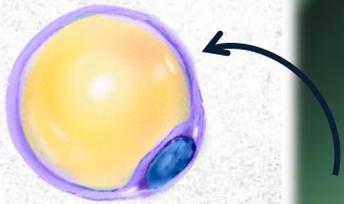


Obrigada!

BIÓLOGA ILUSTRADORA?

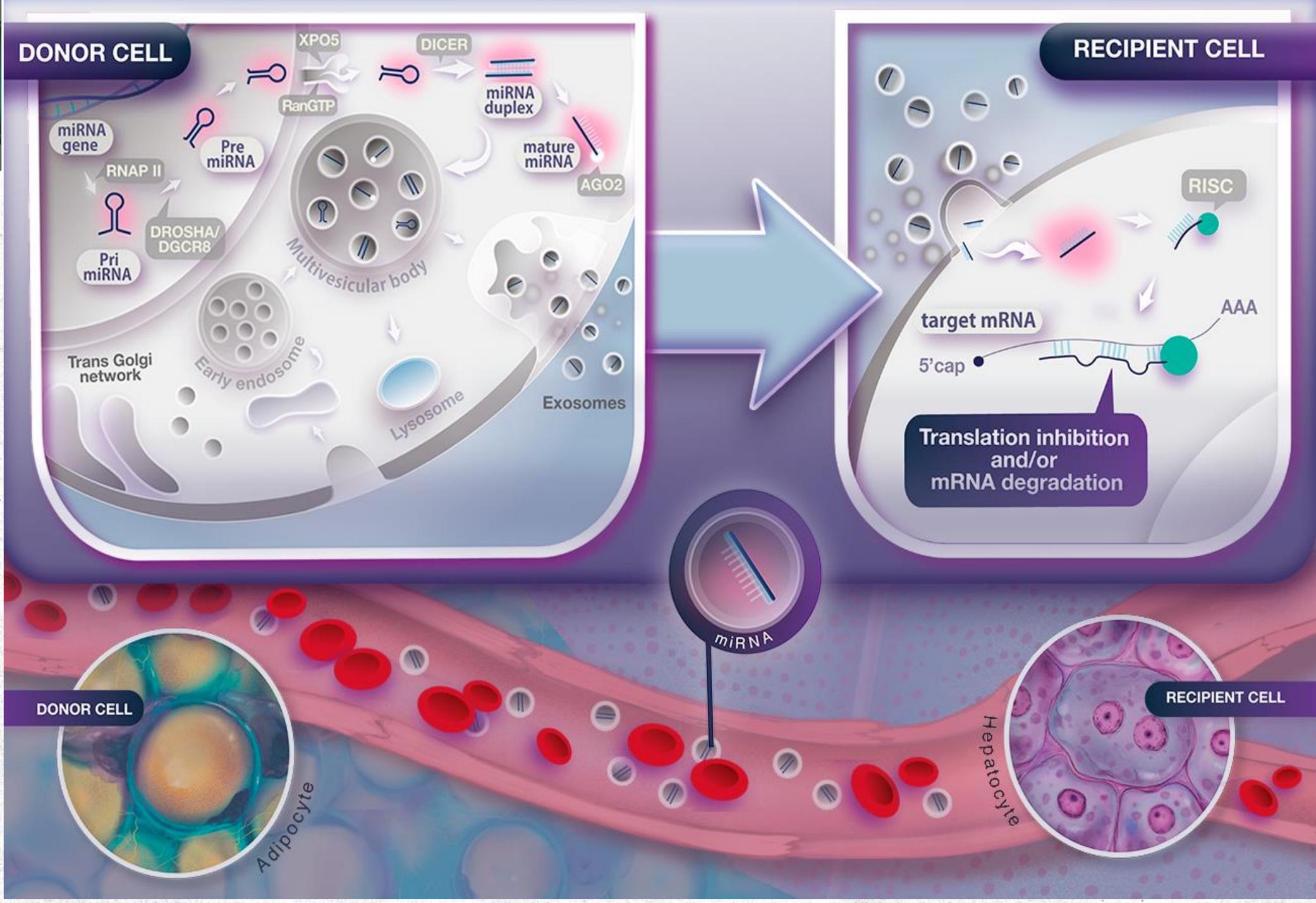
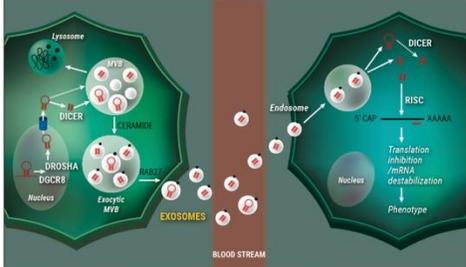
Proposta de designer não-especialista recebida pelo pesquisador

adipócito



hepatócito

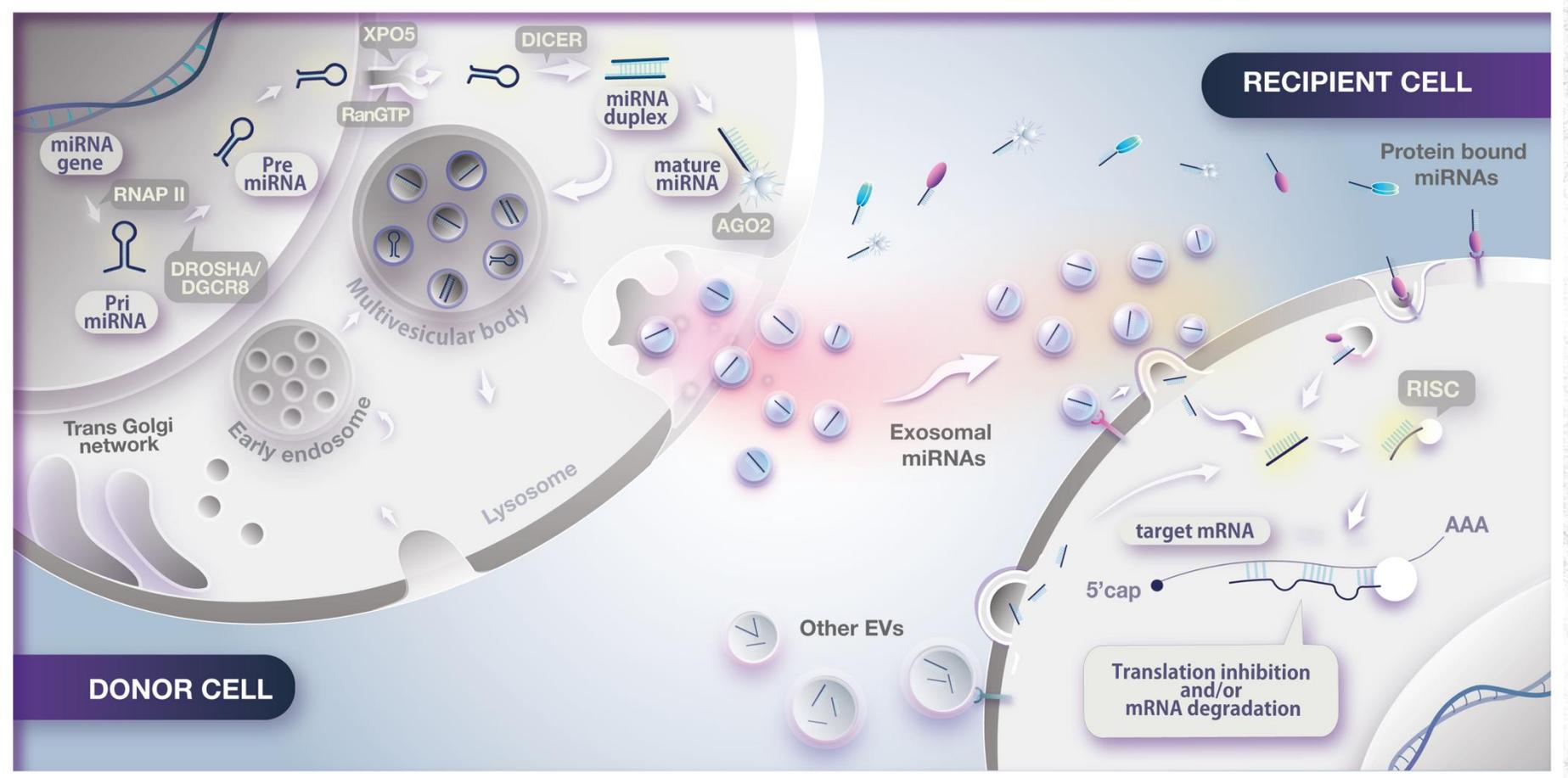
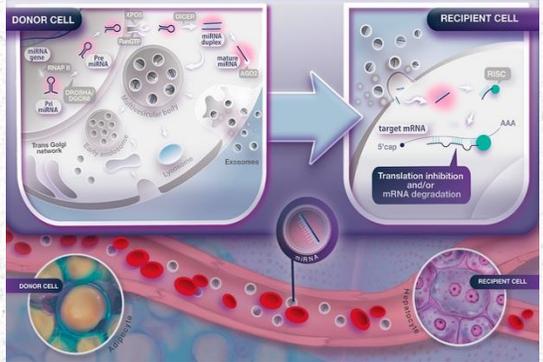
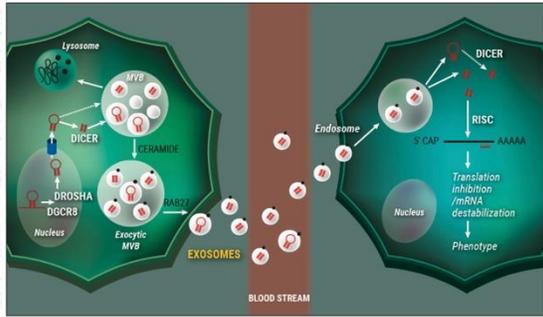




Minha proposta inicial



Acervo pessoal



Versão publicada





IC “tradicional”

União Nacional de Ilustradores Científicos
Encontro Brasileiro sobre Ilustração Científica
Bolsa Margaret Mee do Jardim Botânico do RJ



Blog Rogério Lupo



English / Português

Graphite Online Course

Guidebook &
First Class for free

Grafite: Curso Online

Apostila &
Primeira Aula gratuitas

©Rogério Lupo

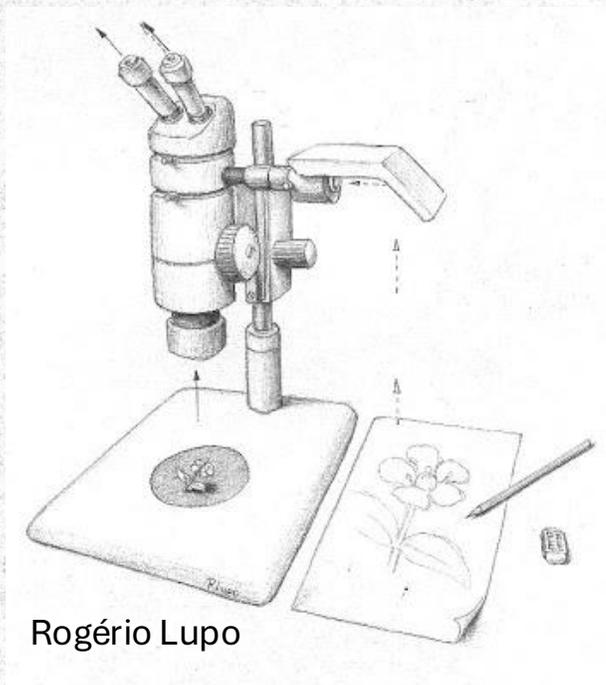


Cristiane Gardim

Echinopsis ancistrophora painted by Margaret Mee Fellowship Programme 2016. Scholar Alessandro Candido



Dulce Nascimento
“Plantas Brasileiras”



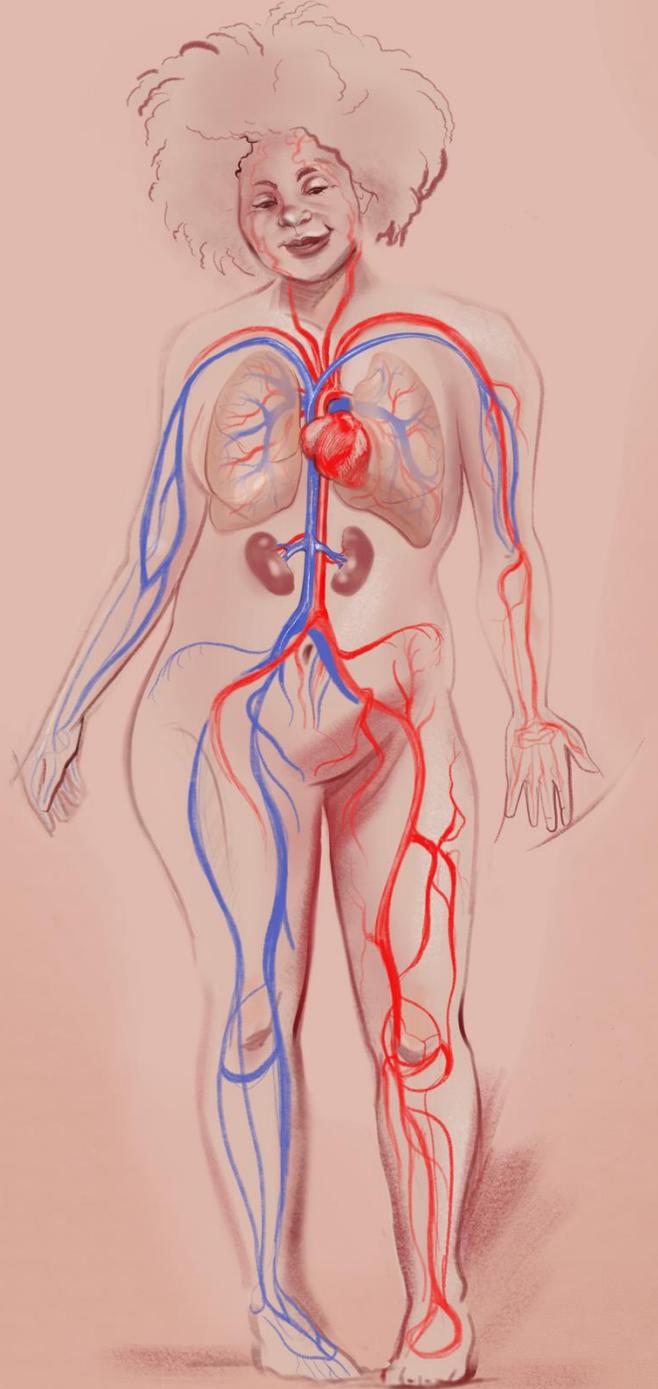
Rogério Lupo



CURSO GRAFITE ONLINE
ROGÉRIO LUPO

Grão de pólen de *Hymenaea aurea* - Fabaceae. Lápis Staedtler Mars Lumograph black 2B, 4B e 6B + Polychromos Ivory nos realces de luz. Papel Canson Mi Teintes, verso.





1

Our circulatory system comprises the heart, veins, and arteries. But it does not act on its own; this system - also called cardiovascular - **CONSTANTLY INTERACTS WITH OTHER ORGANS**, such as the lungs and kidneys, where gas exchange and blood filtration take place.

2

The main function of the circulatory system **IS TO DISTRIBUTE NUTRIENTS AND OXYGEN TO THE ORGANS** of the body through the blood, thus ensuring the full functioning of our body.

3

In the body at rest, our blood is pumped by the heart throughout the body in just **1 MINUTE**.

4

This pumping is done continuously, and the blood circulates only in one direction in our body

5

Within the heart itself, blood flow between the atria and ventricles is from top to bottom. This control is carried out by **THE HEART VALVES**.

6

THE KIDNEYS aren't part of the circulatory system, but are directly related to the heart. They act as a filter and receive approximately **1.2 LITERS OF BLOOD PER MINUTE**, which is about a quarter of the blood pumped by the heart. It can be said that the kidneys filter all of a person's blood about 12 times an hour

7

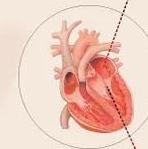
BODY BLOOD FLOW

VENOUS BLOOD (poor in oxygen) arrives from human tissues to the heart through the right atrium, which corresponds to the upper right chamber.

Then, the blood reaches the right ventricle - the lower chamber - through the **TRICUSPID VALVE**, which controls the flow between the atrium and the right ventricle.

From there, venous blood travels to the **LUNGS**, where it is oxygenated. This exchange of carbon dioxide for oxygen in blood cells (red blood cells) is called hematoxis.

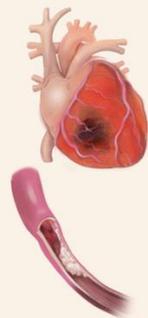
On the left side of the heart, the pulmonary veins **CARRY OXYGENATED ARTERIAL BLOOD** from the lungs to the left atrium - the upper chamber.



It transfers this renewed blood to the left ventricle through the **MITRAL VALVE**, which controls the flow on the left side of the heart.

In the left ventricle, oxygenated blood is carried by the aorta artery to be **REDISTRIBUTED TO THE BODY**.

HEAD TO TOES CONNECTION



ACUTE MYOCARDIAL INFARCTION

Also known as a "HEART ATTACK", it happens when the flow of blood to the heart is interrupted, usually due to the accumulation of fat in the arteries. It is estimated that, in Brazil, there are 300 to 400 thousand heart attacks per year, resulting in 60 thousand of deaths. It is the **BIGGEST CAUSE OF DEATH IN BRAZIL**, according to the Ministry of Health.

MAIN SYMPTOMS OF HEART ATTACK
Severe chest pain, which may radiate to the arm
Dizziness
Cold sweat
Malaise



weak heartbeats



normal heartbeats

CARDIAC FAILURE

The problem arises when the heart muscles can no longer pump blood effectively. The disease is **MORE COMMON IN THOSE WITH HYPERTENSION**, as this condition weakens the heart muscle. Unfortunately, hypertension affects about a third of the world's adult population and is also associated with other problems, such as heart attack, stroke, chronic kidney disease, and cardiac arrhythmias.

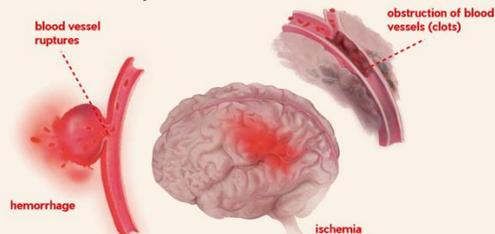
MAIN SYMPTOMS OF HEART FAILURE

Progressive fatigue
Swelling in legs and feet
Dry cough at night
Shortness of breath

CEREBRO-VASCULAR ACCIDENT (CVA / STROKE)

It happens when the blood flows to the brain changes, leading to the death of nerve cells. There are two types of stroke: the **MOST COMMON** (85% of cases) is ischemic when there is obstruction of blood vessels.

When a vessel ruptures, hemorrhagic stroke occurs, which is **MORE SERIOUS**. This disease affects more men and is one of the main causes of death, disability, and hospitalization in the world.

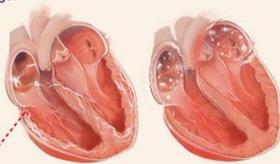


ATRIAL FIBRILLATION

This heart arrhythmia causes rapid and irregular heartbeats. Fortunately, the ventricles are able to filter out most of these chaotic electrical impulses. The biggest problem is the high risk of thrombi (or clots) forming in the heart, which can travel to the brain and cause a stroke. **ADVANCED AGE IS A MAJOR RISK FACTOR**: the worldwide prevalence of the disease jumps from about 0.4% in the general population to about 2% in people over 60 years of age.

NORMAL HEART RATE:
the atrium beats 70 to 80 times per minute

ATRIAL FIBRILLATION (HIGH RESPONSE):
up to 600 contractions per minute



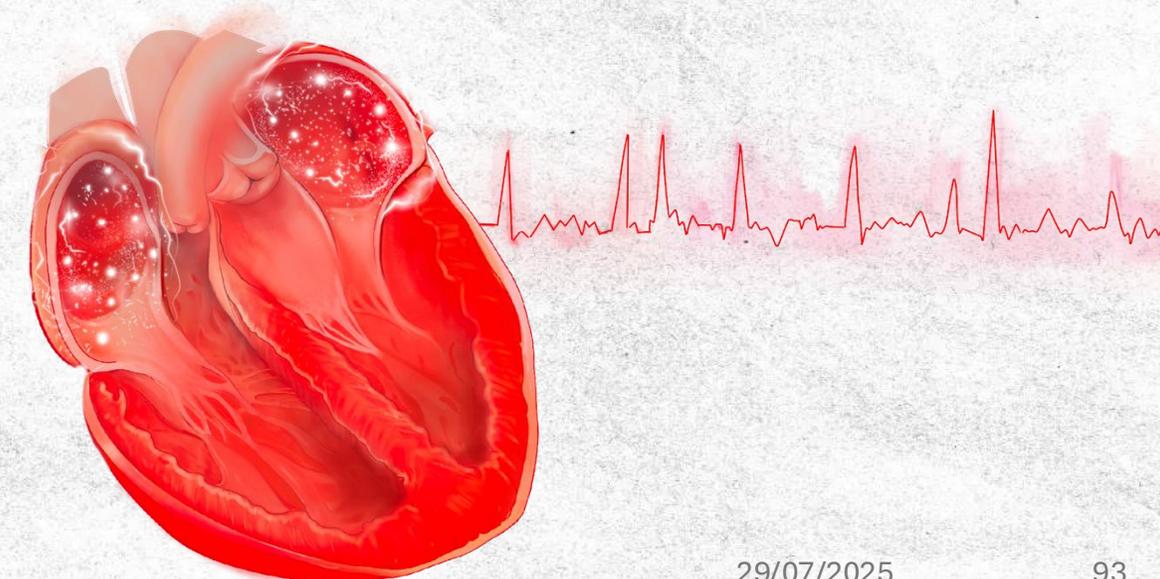
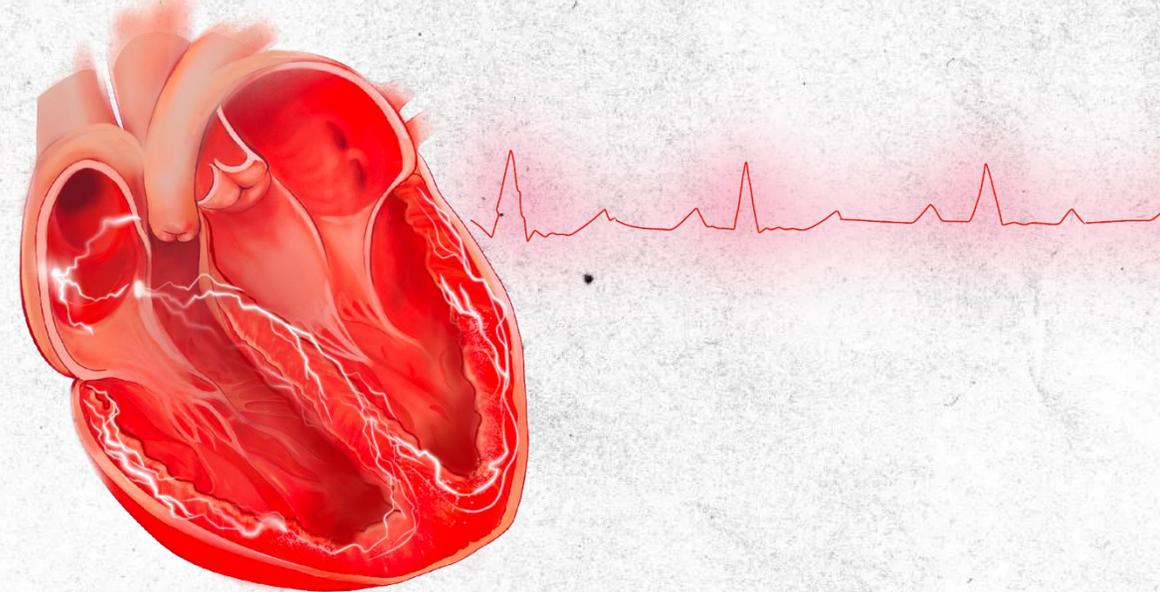
electrical impulses

normal heartbeats

heart arrhythmia

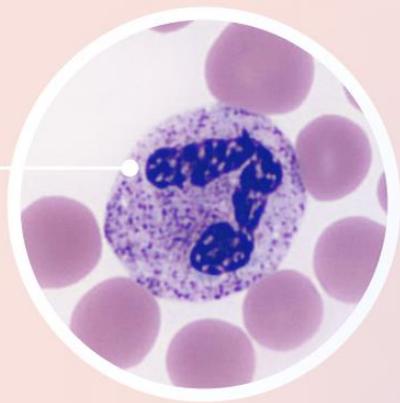
CARDIOVASCULAR DISEASES ARE THE LEADING CAUSE OF DEATH AND DISABILITY IN BRAZIL AND WORLDWIDE.

According to the Brazilian Society of Cardiology (SBC), about 14 million Brazilians have heart disease and about 400,000 die each year from some heart condition, representing **30% OF ALL DEATHS IN THE COUNTRY**.



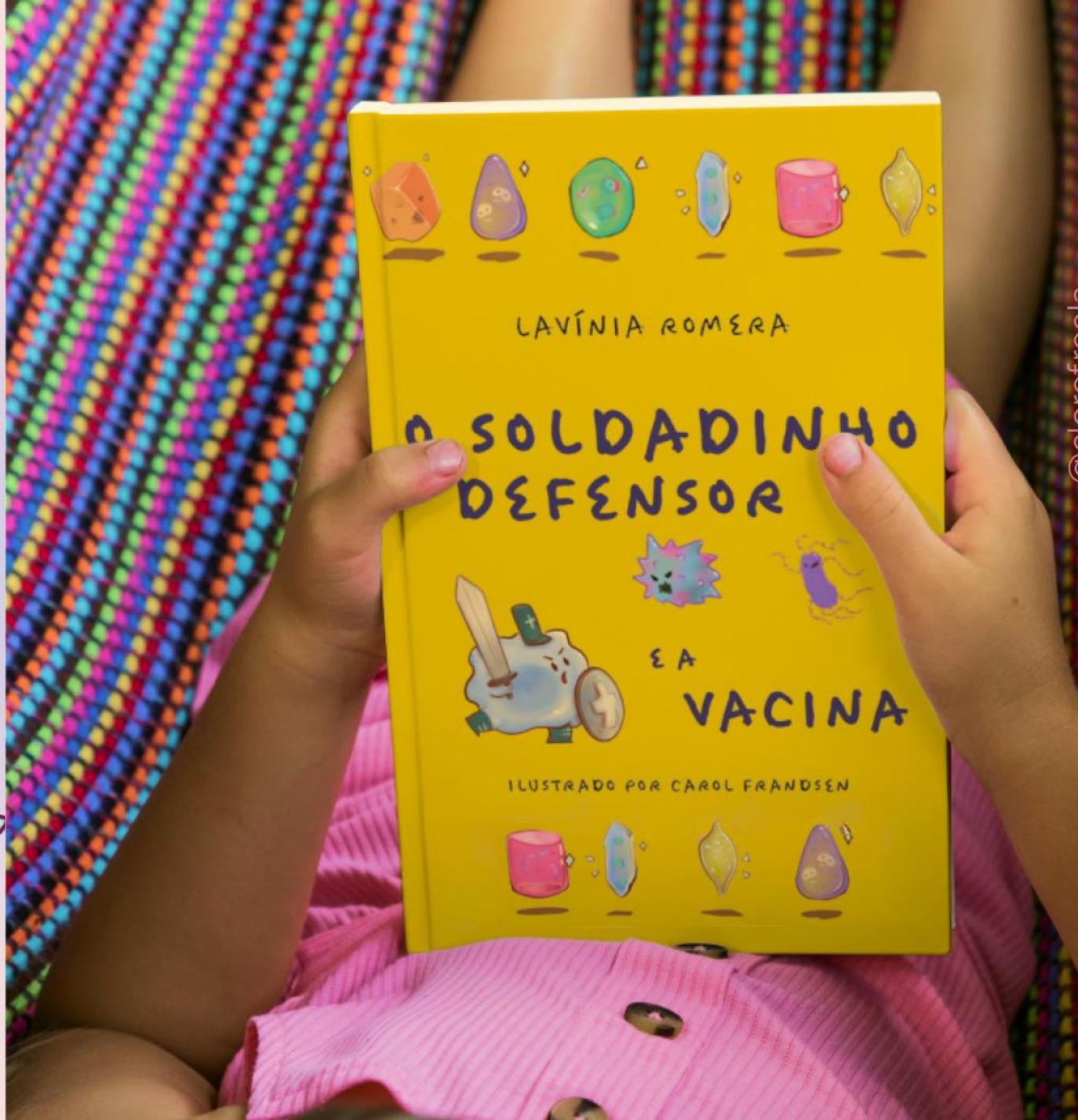
WHAT AFFLICTS YOUR HEART?

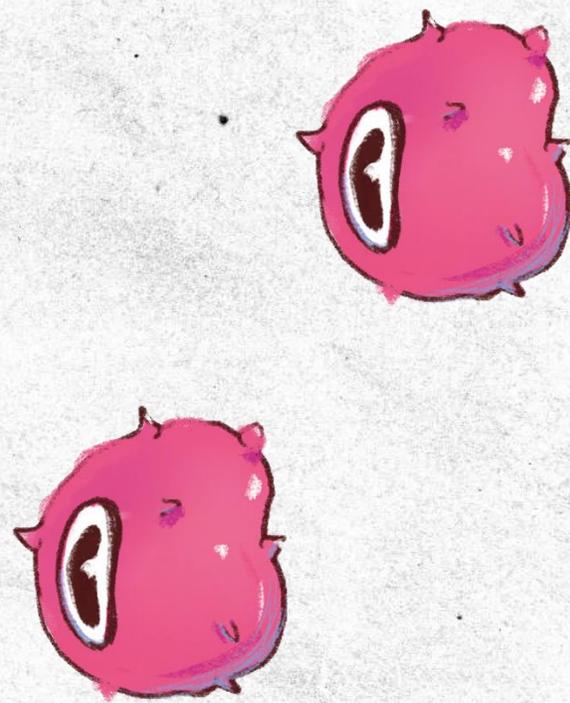
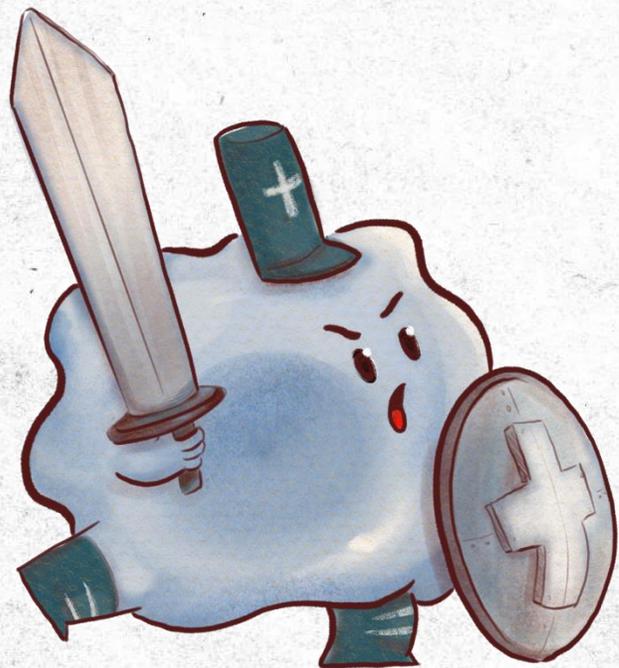
El*Falaf
WikiCommons

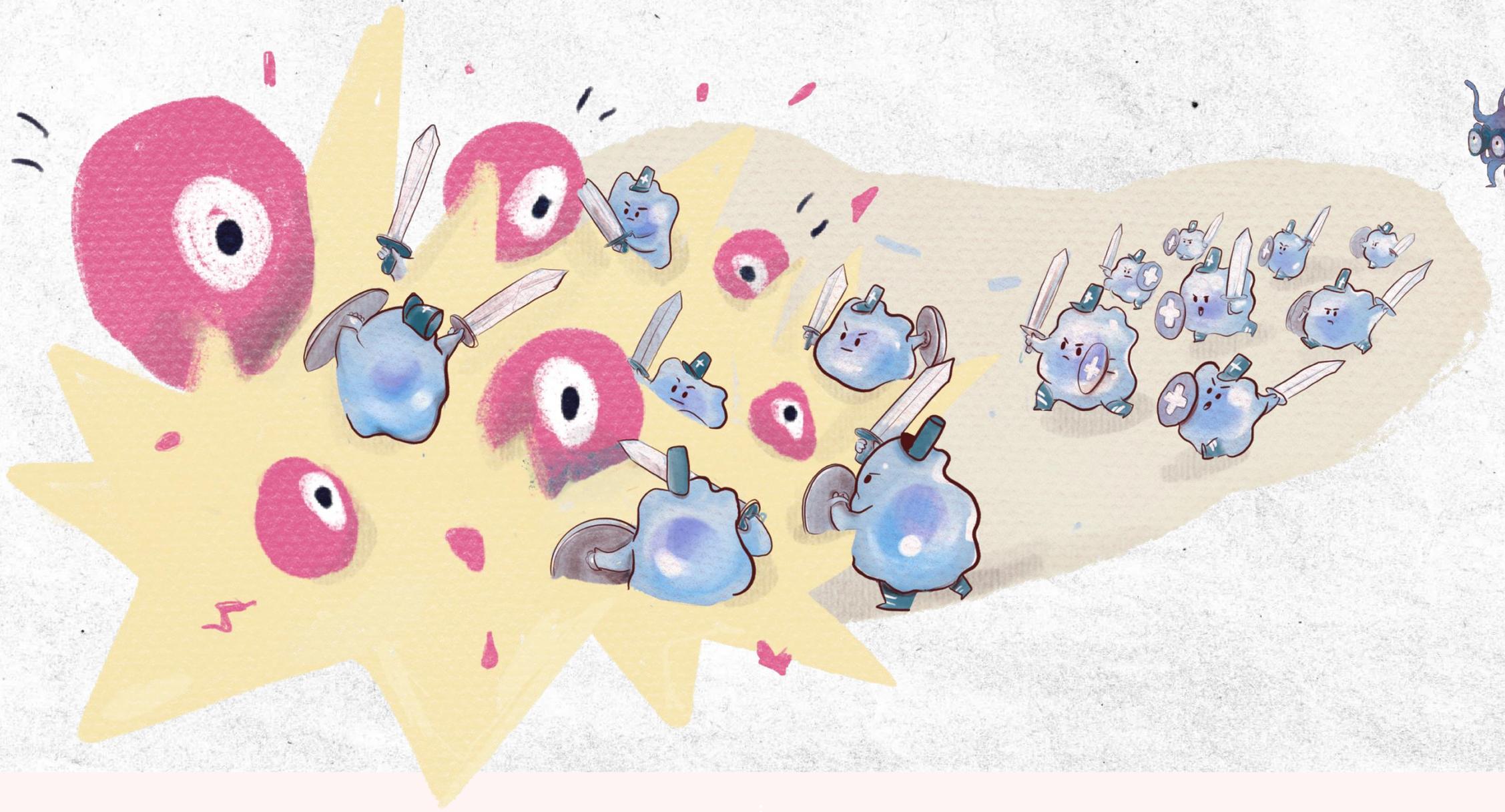


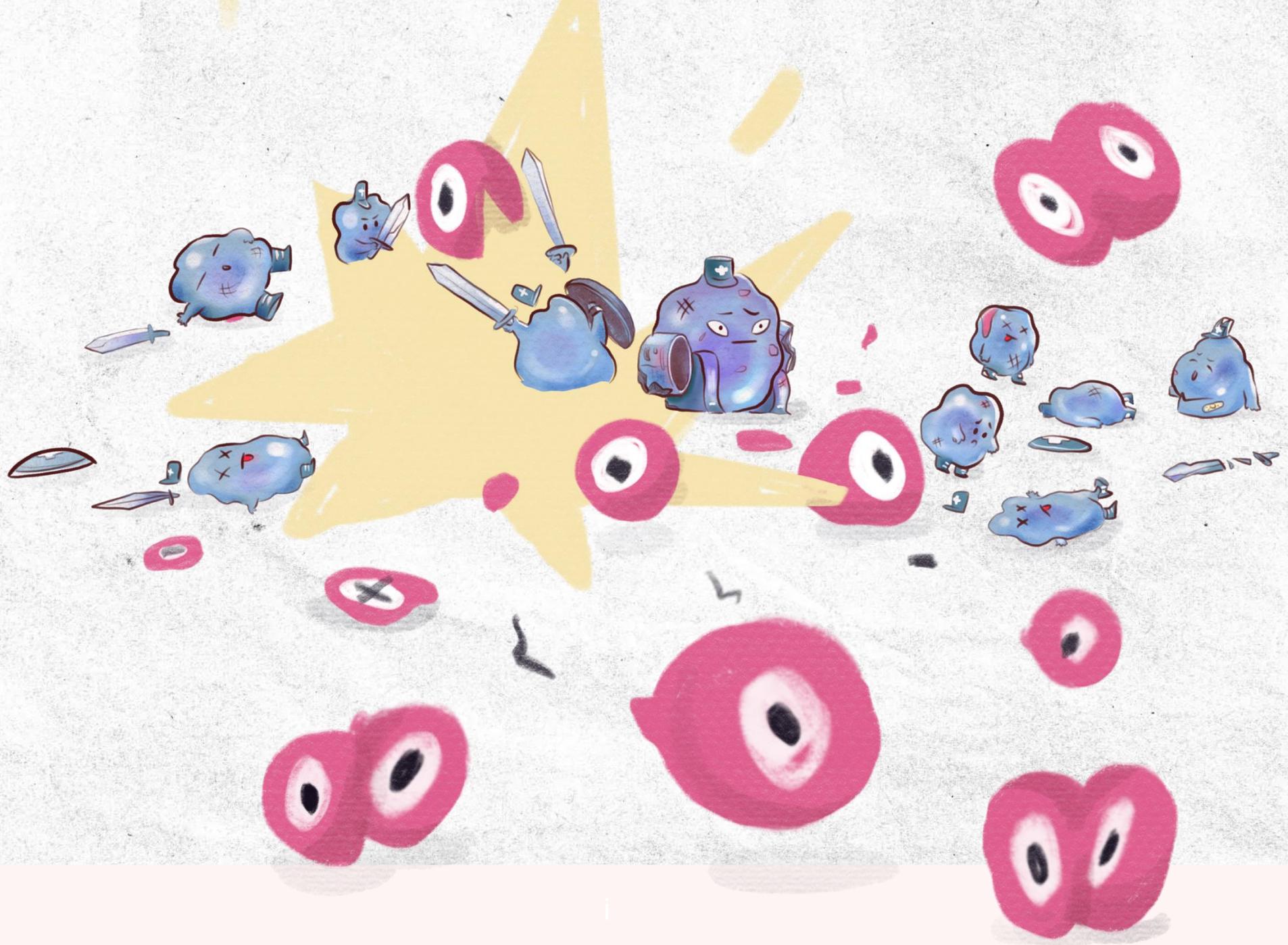
Neutrófilo

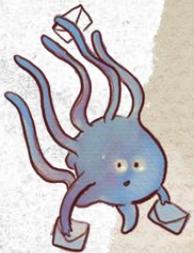
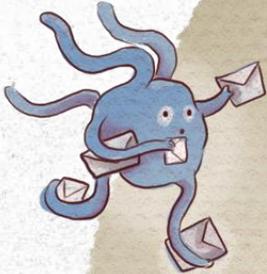
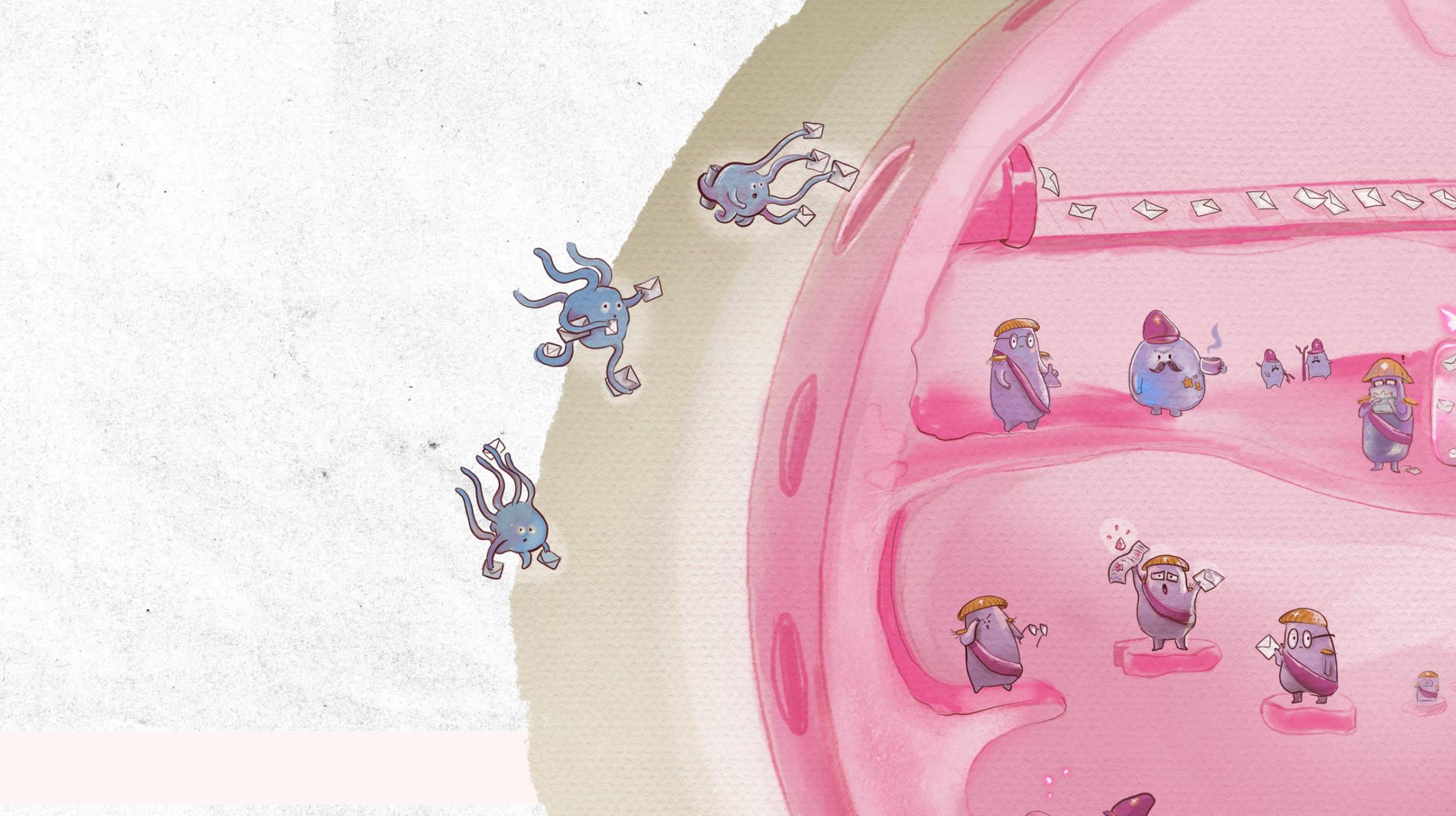
Faz parte da primeira linha de defesa do organismo: fagocitam, matam e digerem fungos e bactérias.



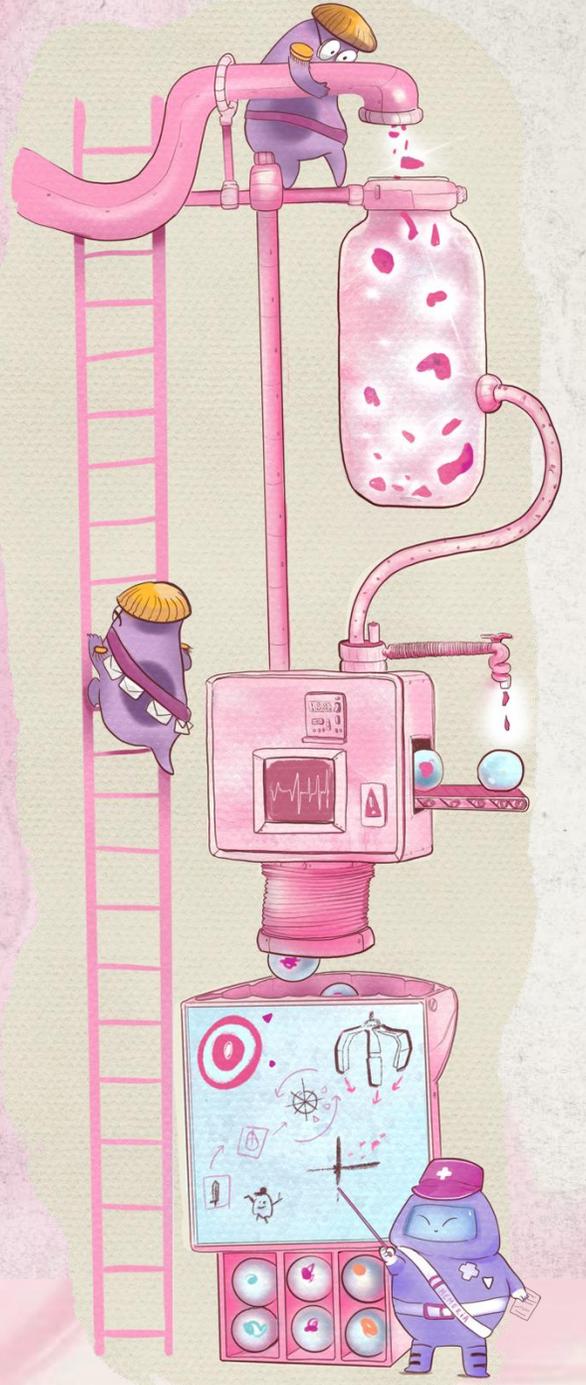


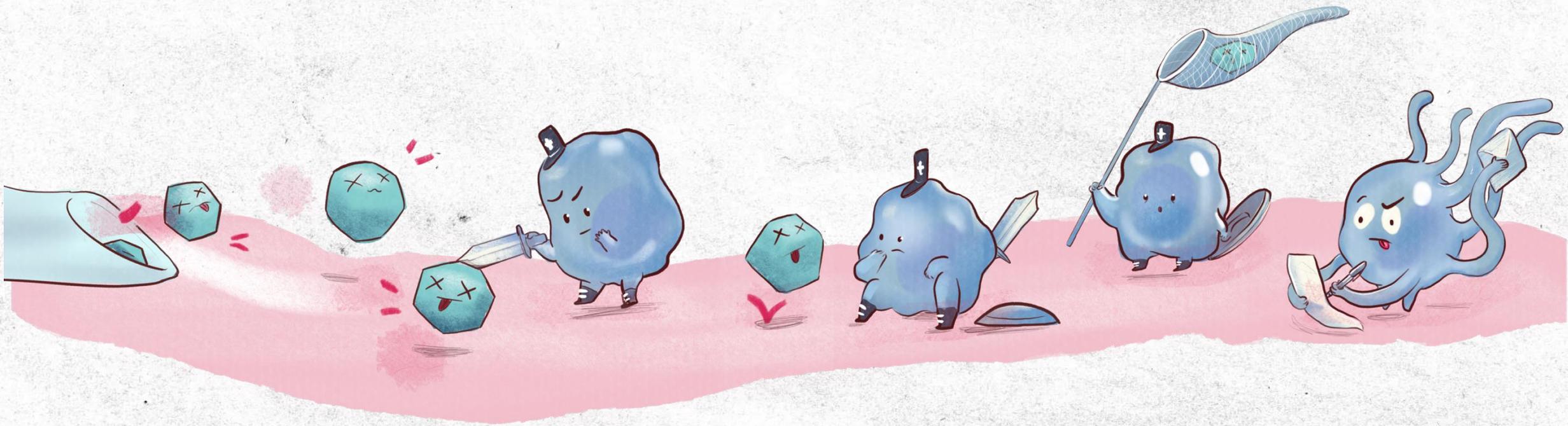




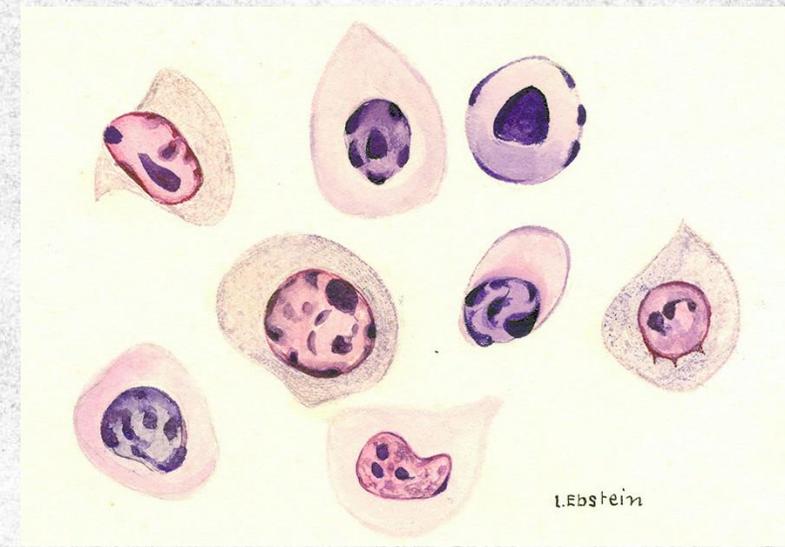












Escola Lette-Verein, Berlin



A Seção de Desenho do Instituto Biológico em novembro de 1958. Da esq. p/ a dir.: Helena Vieira Franco do Amaral, Inês Sarmento, Jacyra Pereira de Campos, Lilly Althausen, Walter Ferraz Robbe, Noémia Saggese e Juventina dos Santos.

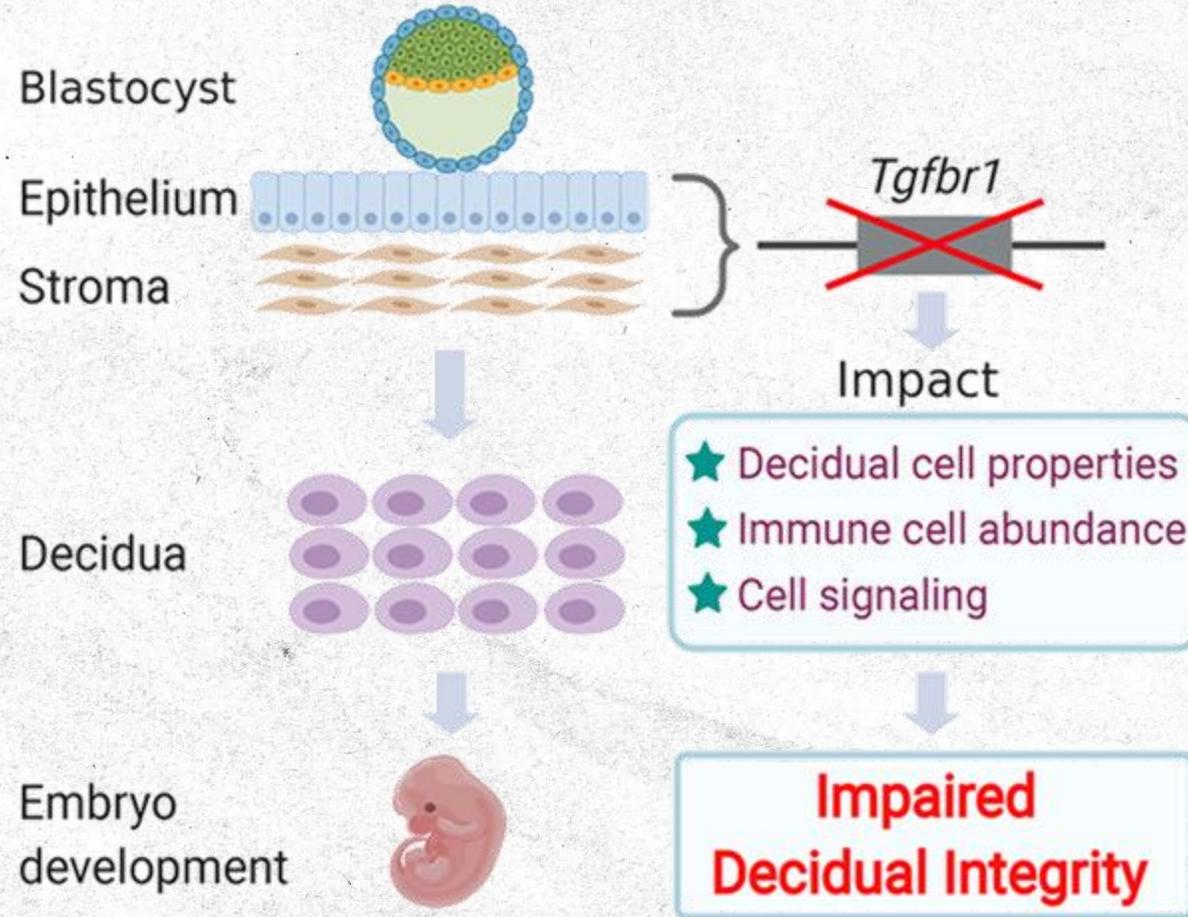
O Instituto Biológico (...) foi fundado em 1927, a partir do trabalho da comissão para o Estudo e Debelação da Praga Cafeeira (...) para o combate á praga da broca.

(...) O trabalho de desenho ou ilustração era fundamental ao desenvolvimento da pesquisa científica, parte indispensável dos procedimentos de pesquisa, do registro documental, da preparação do material didático de aulas, da publicação científica e da divulgação para os produtores e ao público em geral.

Os desenhos permitiam ao pesquisador indicar exatamente, de forma visual, as características da patologia ou do tratamento, por exemplo, e ao mesmo tempo permitiam ao produtor agrícola ou animal identificar a doença e entender com precisão o que deveria ser realizado. Em muitos casos, a ilustração poderia até prescindir de um texto que a acompanhasse, englobando no desenho toda a informação necessária” .

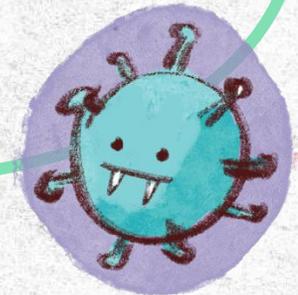
(...)

Seção de Desenho e Fotomicrografia > desenhista-microscopista chefe, um fotomicrografo e ajudante do fotomicrografo.



Resumo gráfico
Graphical abstract

Infográfico descrevendo os pontos chave de uma pesquisa (geralmente destaca o delineamento experimental e as conclusões)



DOI: 10.1093/biolre/ioaa155

Autoria: Fang et al, 2020

The graphical abstract for this manuscript was created with [BioRender.com](https://www.biorender.com).





Pra quê desenhar se podemos fotografar?

Ilustração científica é, antes de tudo, comunicação visual

“torna o invisível visível”

& o pensamento verbal não pode ser dissociado do pensamento visual



Biomédica

Zoológica

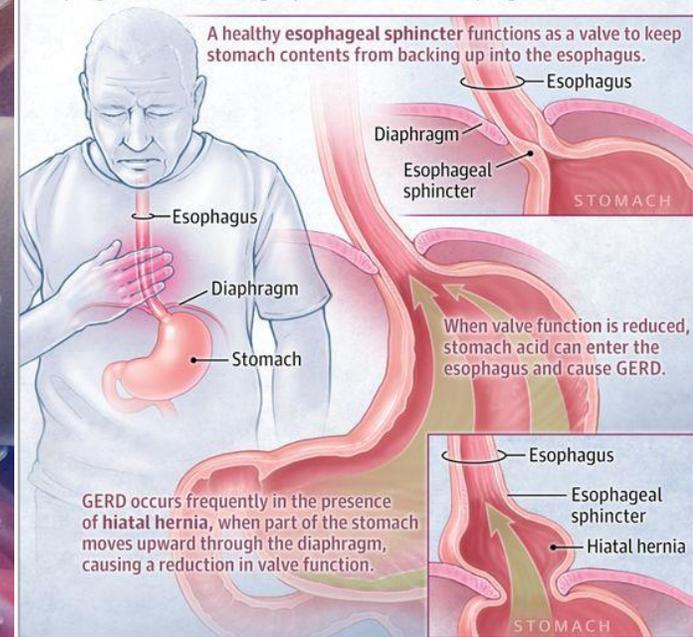
Botânica

Astrofísica

Divulgação científica

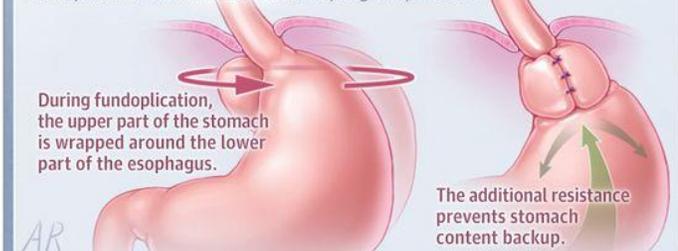


Gastroesophageal reflux disease (GERD) is a common condition that occurs when acidic stomach contents enter the esophagus, causing symptoms such as heartburn and regurgitation. GERD can cause inflammation of the esophageal mucosa and slightly increases risk of esophageal cancer.



Treatment of GERD

GERD is treated with proton pump inhibitor drugs that reduce the production of stomach acid and lifestyle changes such as losing weight and smoking cessation. Some patients may also be considered for a surgical procedure called fundoplication that reinforces the esophageal sphincter.



Biomédica

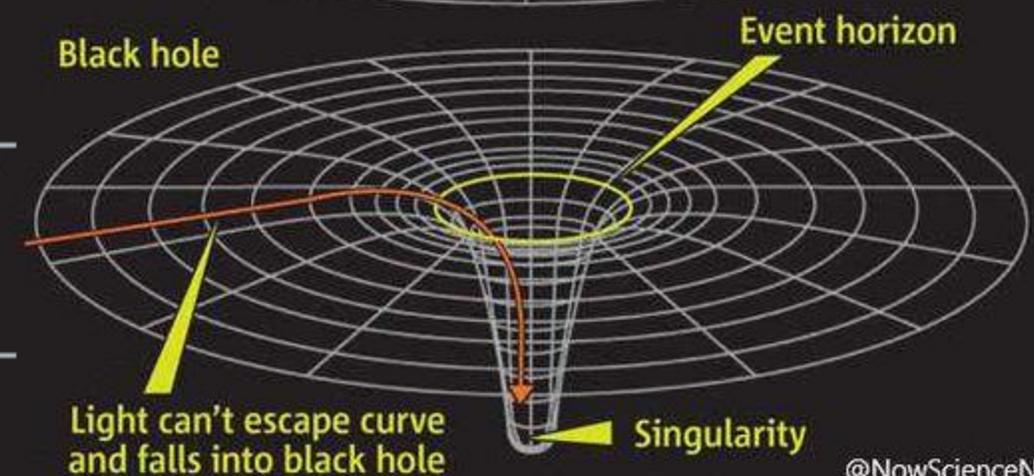
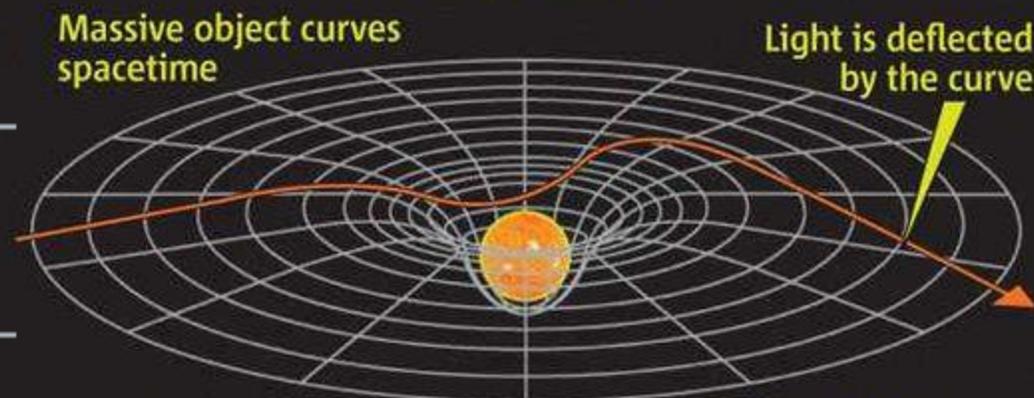
Zoológica

Botânica

Astrofísica

Divulgação científica*

Like a heavy bowling ball on a rubber sheet, the gravity of a galaxy or other massive object can warp the fabric of space-time around it.



@NowScienceNews

Biom

Zoolo

Botâ

Astro

Divulgação científica*

Pre-eclampsia / Eclampsia

Characterised by high blood pressure and protein leak in the urine

The infographic depicts a pregnant woman sitting on the ground in a forest, looking distressed. She has several symptoms: severe headaches (indicated by red lightning bolts), changes in vision (indicated by a skull with 'A' and 'Changes in vision'), fatigue (she is slumped over), tummy pain (indicated by a red star on her abdomen), upper limb swelling (indicated by a thought bubble with a blood pressure gauge and 'Upper limb swelling'), bruising easily (indicated by a bruise on her leg), and reduced fetal growth (indicated by a smaller fetus in the womb). A text box explains that the placenta's blood supply develops abnormally, reducing flow to the baby and releasing inflammatory factors, causing the body to increase blood pressure. Another text box notes that untreated, the brain can swell, causing seizures, stroke, and death. A third text box states that damaged kidneys leak protein, causing the body to retain fluid, resulting in small amounts of urine and limb swelling. The artist's signature 'Ciléin' is visible at the bottom right of the illustration.

Severe headaches

Changes in vision

Fatigue

Untreated, the brain can swell causing seizures, stroke, and death.

High blood pressure

Upper limb swelling

Reduced fetal growth

The placenta's blood supply develops abnormally, reducing flow to the baby and releasing inflammatory factors. The body increases blood pressure to try and overcome this.

Tummy pain

Bruising easily

Damaged kidneys leak protein causing the body to retain fluid. This results in small amounts of urine, and limb swelling.

artibiotics

Autoria: [Ciléin Kearns](#)

[@artibiotics](#)

The infographic illustrates two types of stroke: ischemic and hemorrhagic. The top part shows a cross-section of a blood vessel with a red clot blocking it, labeled 'obstrução de vaso sanguíneo (coágulo)'. Below this, a brain is shown with a red area indicating 'isquemia' (ischemia). The bottom part shows a cross-section of a blood vessel with a hole, labeled 'ruptura de vaso sanguíneo', with blood spilling out, labeled 'hemorragia'. The text 'avc' is written in large red letters. The logo 'Clara Freela' is in the top left corner. The artist's name 'Carol Frandsen' and social media handle '@clorofreela' are on the right side. At the bottom, a small heart icon is next to the text 'material produzido para a exposição "S2 Coração, Pulso da Vida"'. The artist's signature 'Ciléin' is visible at the bottom right of the illustration.

Clara Freela

avc

obstrução de vaso sanguíneo (coágulo)

isquemia

hemorragia

ruptura de vaso sanguíneo

Carol Frandsen @clorofreela

material produzido para a exposição "S2 Coração, Pulso da Vida"

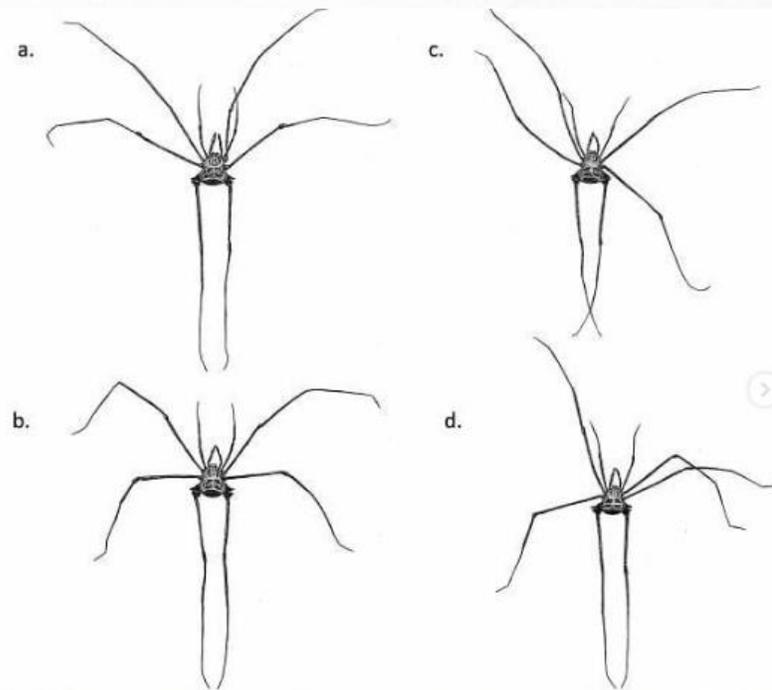
*

Ilustração Científica x Ilustração Naturalista



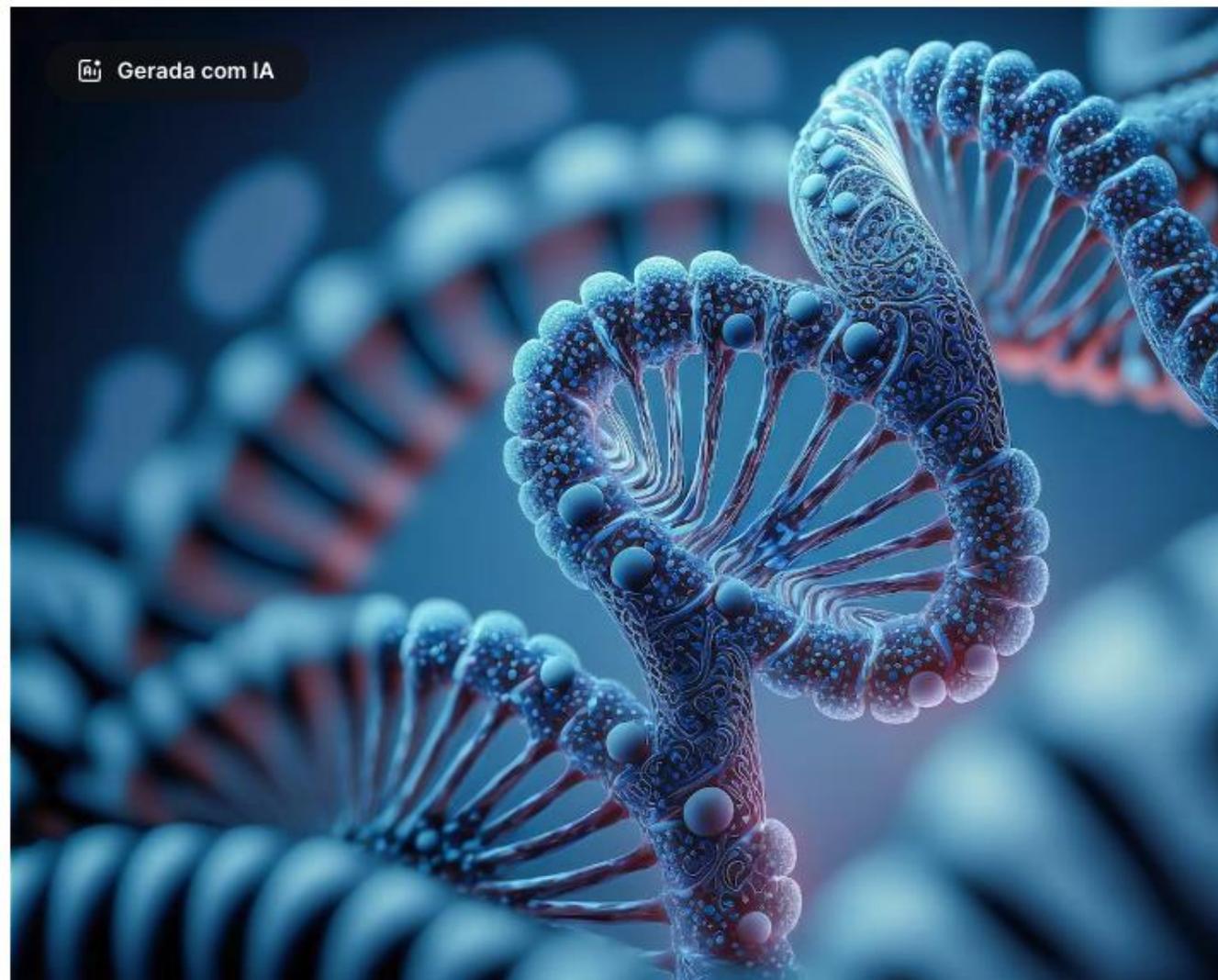
La manipulación en chimpancés

- Blanca Martí de Ahumada -
España



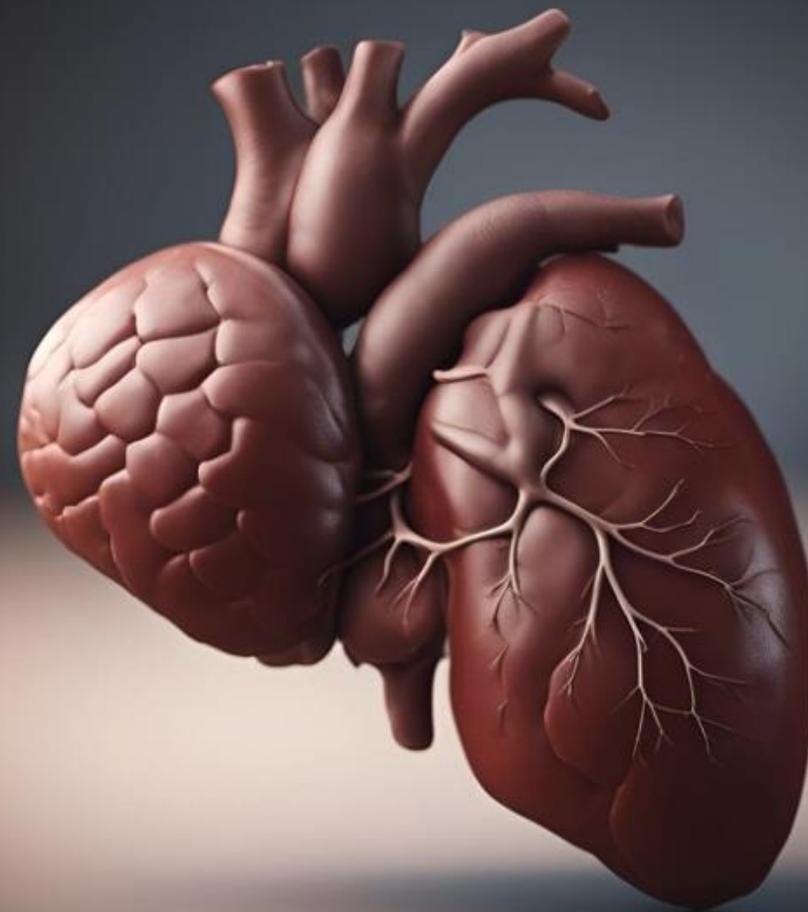
Autoria: Vanessa Seiko

Gerada com IA

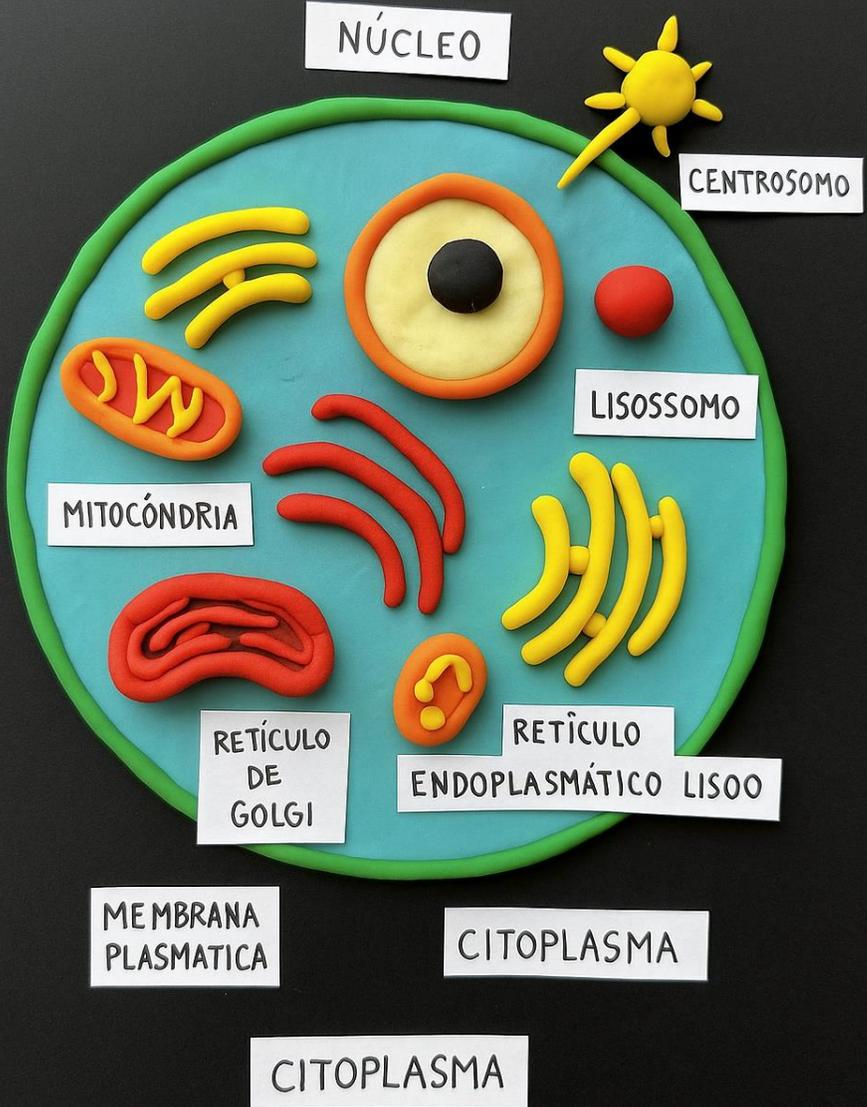


Abril de 2024

Gerada com IA



Julho de 2025



original



pedi para o GTP-4 criar hoje a tarde

crie uma ilustração de mulheres e meninas na ciência

Imagem criada



ALERTA GOLPE



exemplos coletados (diferentes origens)

Frases que não são elogio, nem opinião: são capacitismo

Isso é frescura, na minha época não existia isso
Hoje em dia tudo é autismo, né?
Autismo mesmo é aquele que não fala
É só ansiedade, todo mundo tem
Você não tem cara de autista
Agora é moda ser autista pra ganhar benefícios



olhos como circulo meio ovalado, sem iris ou brilho, narizes com 1 linha só

cores recorrentes



! O MOMENTO NÃO É O MOMENTO NÃO É O MOMENTO

Meu chute da origem do estilo:

 pictoline

NO TODOS SON MASCOTAS

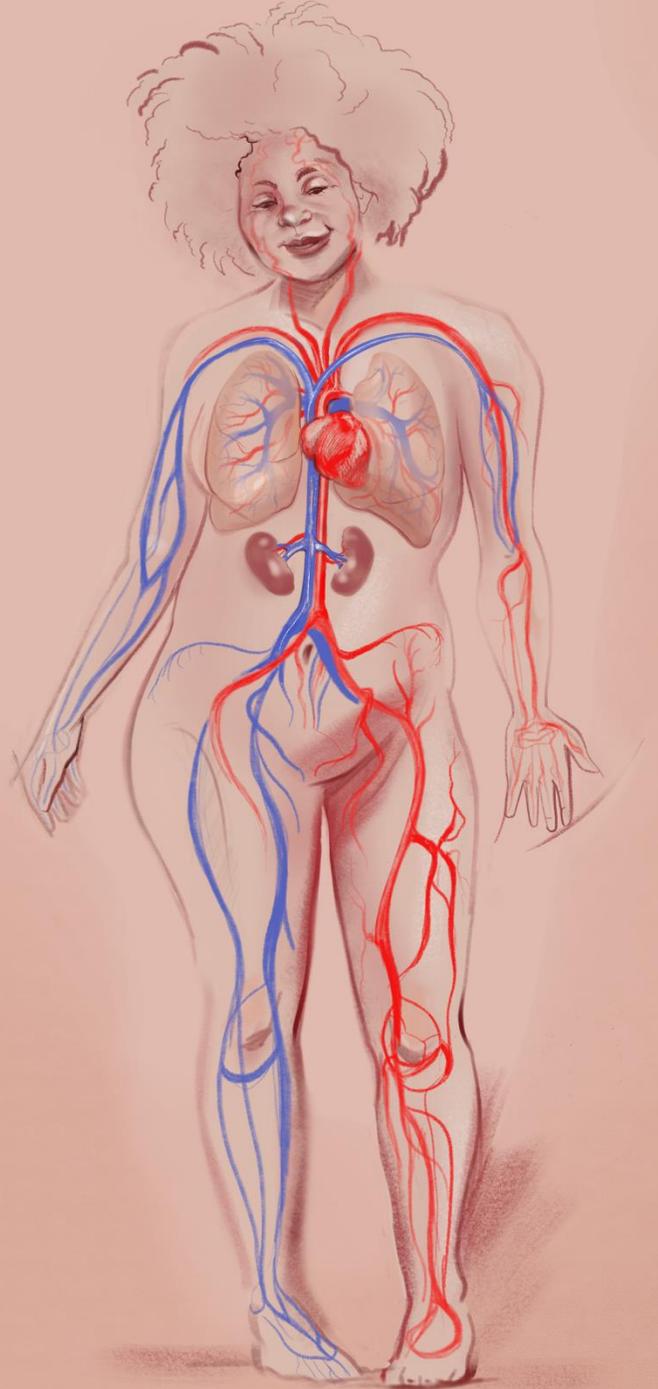
SI ESTÁS PENSANDO EN TENER UN ANIMAL DE COMPAÑÍA, TOMA EN CUENTA QUE

 **HAY DOS TIPOS DE ANIMALES:** 

LOS DOMESTICADOS	LOS SILVESTRES
<p>HAN COEVOLUCIONADO CON LA HUMANIDAD,</p>  <p>NECESITAN DE SU CUIDADO Y PUEDEN FORMAR VÍNCULOS.</p>	<p>NO DEPENDEN DE LAS PERSONAS PARA SOBREVIVIR Y HASTA PUEDEN SENTIRLAS COMO AMENAZA.</p>  <p>TIENEN NECESIDADES ESPECÍFICAS DIFÍCILES DE CUBRIR EN CAUTIVERIO.</p>
 <p>TAMBIÉN ES FÁCIL ENCONTRARLES VET Y ES LEGAL TENERLOS.</p>	 <p>ADEMÁS, HAY POCOS ESPECIALISTAS EN SU ESPECIE, DE LA QUE SUELE HABER TRÁFICO ILEGAL.</p>
	

FUENTES: APGAW | Discover Magazine | Humans | National Geographic | Universität Wien | VMBS News | World Animal Protection.

 **PICTOLINE**



1 FECHER SUA MÃO E OLHE PARA ELA.
 Esse é aproximadamente o tamanho do seu coração. Seu peso é de cerca de 300 GRAMAS.
 Essas cavidades são separadas ao menos na direção vertical, por uma estrutura chamada septo.

2 QUATRO CAVIDADES
 O coração possui quatro cavidades, os câmaras:
 A) átrio direito
 B) átrio esquerdo
 C) ventrículo direito
 D) ventrículo esquerdo

3 100 MIL VEZES AO DIA
 É quantas vezes o coração contrai, com a capacidade média de bombear 5 litros de sangue por minuto. Isso tudo acontece por meio de um sistema coordenado de quatro bilhões de cardiomiócitos, as fibras musculares cardíacas. Estamos falando de um trabalho impressionante: o coração é o músculo QUE MAIS FAZ ESFORÇO FÍSICO em nosso corpo.

4 PERICÁRDIO
 Membrana que envolve e protege o coração. Essa camada fina contém fluidos lubrificantes de manutenção sem perda de estabilidade anatômica.

5 TUM-TUM
 O ato contrário ao do coração, remanece, é o ato produzido pelo fechamento das suas válvulas, produzido pelo processo chamado **DIÁSTOLE**. O primeiro "tum" se refere à sístole, fase em que o coração se contraí, de seguida, "tum" se refere à diástole, fase em que o músculo relaxa.

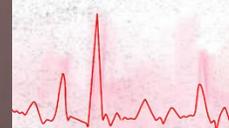
6 BPM
 O número de batimentos por minuto varia em média de 70 a 85 vezes por minuto, e esse ritmo pode aumentar em situações de estresse ou atividade física. Caso a pessoa seja atleta, seu coração terá batido em torno de **3 BILHÕES DE VEZES** no decorrer de sua vida.

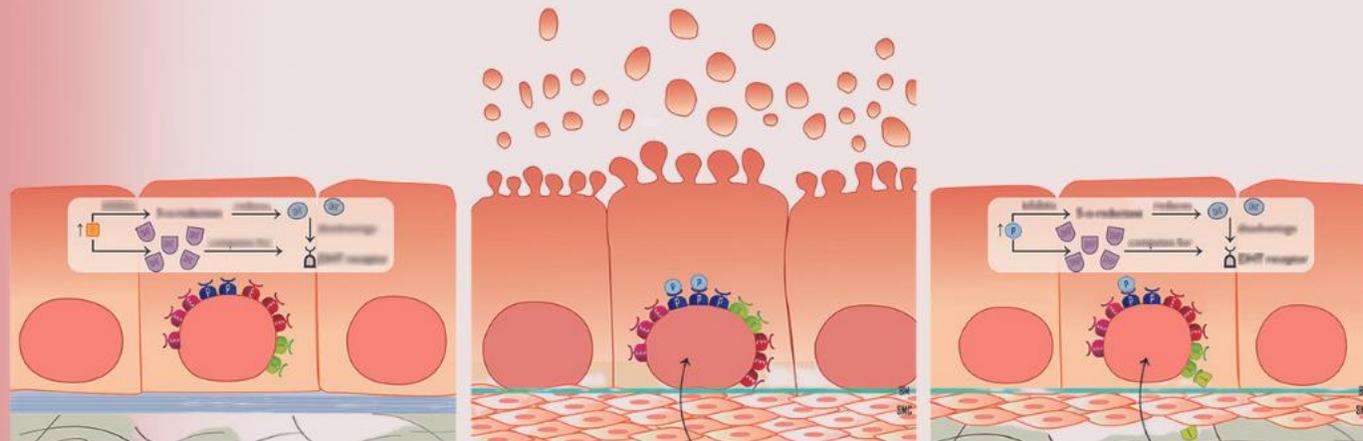
7 FORA DO CORPO
 Mesmo fora do corpo, caso se mantenha recebendo aporte de oxigênio, o coração **CONTINUA PULSANDO**. Esse fato é o que possibilita o transplante do órgão. Inicialmente, não é mesmo!

BATE, CORAÇÃO



Para obter maiores informações sobre o QR Code, consulte o site www.museu.gov.br ou ligue 0800-940000.

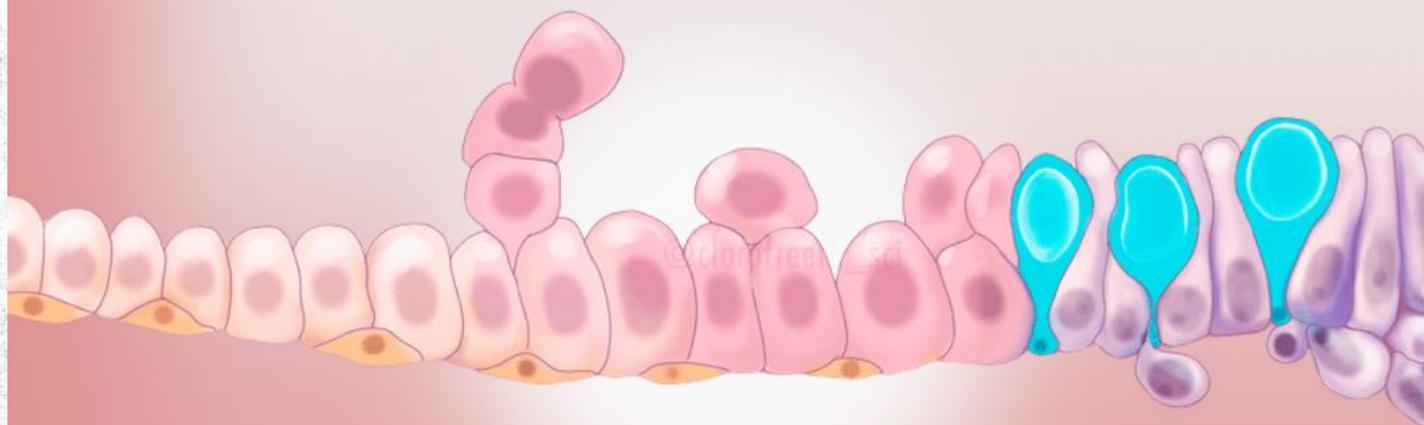




Epitélio prostático da primeira leva de ilustrações científicas....

Progesterone restores the female prostate activity in ovariectomized gerbil(...)

© 2013 Shinohara FZ et al.
DOI: 10.1016/j.lfs.2013.02.005



... e das mais recentes!

CURSOS E RECURSOS

Desenhar é um processo contínuo de aprimoramento



VP, GLOBAL SALES OPERATIONS (20XX)

Selected for short-term assignment to play a primary role in transforming Xxxxxx from a domestic company to one now ~~competitively operating on 3 separate continents worldwide~~. Led sales, marketing, and supply chain integration team following acquisition of a ~~Latin and South American based company~~. ~~Required visionary leadership to overcome problems~~ associated with highly decentralized nature of enterprise, inconsistent inter-company product transfer prices, unsuitable landed costs, and unacceptably high inventory levels. Formed a global sales team and implemented process to better serve Wal-Mart on an international basis, including the U.K., Mexico, Korea, and Argentina.

Key Results:

- Completed assignment 50% ahead of schedule, achieving all goals in just 3 months.
- Won recognition as 1 of 5 original global suppliers to Wal-Mart, leading to new business worldwide.
- Laid groundwork that fostered a 25% increase in Latin American sales within 1 year of acquisition.
- Cut excess inventory \$20 million in 6 months.
- Optimized ~~product movement within corporate supply chain~~ by developing new transfer pricing policy.
- Rationalized Latin American ~~plant operation in conjunction with EVP of Operations~~.
- Implemented an integrated global consensus forecasting process.

VP, NORTH AMERICAN SALES (19XX - 20XX)

Advanced to direct all sales and marketing for a \$320 million consumer products business, including leadership of 215 sales, marketing, merchandising, and business analysis staff. Accelerated organic growth with existing customers and developed new revenue streams by maximizing distribution and positioning products in nearly every mainstream retail distribution channel. Restructured organization into customer-focused teams, successfully solving problems with poor performance in customer delivery metrics and increasing efficiencies in promotion planning cycles and promotions' speed to market.

Key Results:

- Generated record-setting sales and earnings for 6 consecutive quarters.
- Tripled business with Sears to \$20 million, growing to distinction as company's 3rd largest customer.
- Produced 55% improvement in on-time, accurate, complete shipments to customers.
- Expedited speed-to-shelf for new promotions and products 166%, cutting required time 5 months.
- Earned honors for company as *Vendor of the Year* at ShopKo and Wal-Mart Canada.
- Selected twice as *Vendor of the Quarter* by Wal-Mart (US).
- Transformed supplier organization into a customer-centric team focused on meeting customer needs.

VP, CONSUMER SALES (19XX - 19XX)

Recruited by CEO to drive new, profitable revenue streams and lead expansion of retail distribution. Headed a 32-person team and managed all sales and channel marketing for the \$120 million business. Held direct-line responsibility for 80 retail merchandising representatives. Took over during a period of sluggish sales and restructured the organization to achieve 15% growth targets. Reduced headcount 15% and launched new customer consulting partner program.

Key Results:

- Jumpstarted stagnant sales and surpassed net sales and sales margin plans for 8 consecutive quarters.
- Produced \$30+ million new and incremental business in just 2 years.
- Penetrated ~~4,000 new distribution points~~ including supermarkets, hardware stores, and auto centers.
- Refocused sales team initiatives and strategies to ~~cover all customer initiatives~~.
- Played key role in pioneering Xxxxxxxx's distribution expansion beyond ~~traditional retail channels~~.

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Ordem de leitura

VP, GLOBAL SALES OPERATIONS (20XX)

Selected for short-term assignment to play a primary role in transforming Xxxxxx from a domestic company to one now competitively operating on 3 separate continents worldwide. Led sales, marketing, and supply chain integration team following acquisition of a Latin and South American battery company. Required visionary leadership to overcome problems associated with highly decentralized nature of enterprise, inconsistent inter-company product transfer prices, unsuitable landed costs, and unacceptably high inventory levels. Formed a global sales team and implemented process to better serve Wal-Mart on an international basis, including the US, Mexico, Korea, and Argentina.

Key Results:

- Completed assignment 50% ahead of schedule, achieving all goals in just 3 months.
- Won recognition as 1 of 5 original global suppliers to Wal-Mart, leading to new business worldwide.
- Laid groundwork that fostered a 35% increase in Latin American sales within 1 year of acquisition.
- Cut excess inventory \$20 million in 6 months.
- Optimized product movement within corporate supply chain by developing new transfer pricing policy.
- Rationalized Latin American plant operation in conjunction with EVP of Operations.
- Implemented an integrated global consensus forecasting process.

VP, NORTH AMERICAN SALES (19XX - 20XX)

Advanced to direct all sales and marketing for a \$320 million consumer products business, including leadership of 215 sales, marketing, merchandising, and business analysis staff. Accelerated organic growth with existing customers and developed new revenue streams by maximizing distribution and positioning products in nearly every mainstream retail distribution channel. Restructured organization into customer-focused teams, successfully resolving problems with poor performance in customer delivery metrics and increasing efficiencies in promotion planning cycles and promotions' speed to market.

Key Results:

- Generated record-setting sales and earnings for 6 consecutive quarters.
- Tripled business with Sears to \$20 million, growing to distinction as company's 3rd largest customer.
- Produced 53% improvement in on-time, accurate, complete shipments to customers.
- Expedited speed-to-shelf for new promotions and products 166%, cutting required time 5 months.
- Earned honors for company as *Vendor of the Year* at ShopKo and Wal-Mart Canada.
- Selected twice as *Vendor of the Quarter* by Wal-Mart (US).
- Transformed supplier organization into a customer-centric team focused on meeting customer needs.

VP, CONSUMER SALES (19XX - 19XX)

Recruited by client to drive new, profitable revenue streams and lead expansion of retail distribution. Headed a 32-person team and managed all sales and channel marketing for the \$120 million business. Held dotted-line responsibility for 80 retail merchandising representatives. Took over during a period of sluggish sales and restructured the organization to achieve 15% growth targets. Reduced headcount 15% and launched new customer consulting partner program.

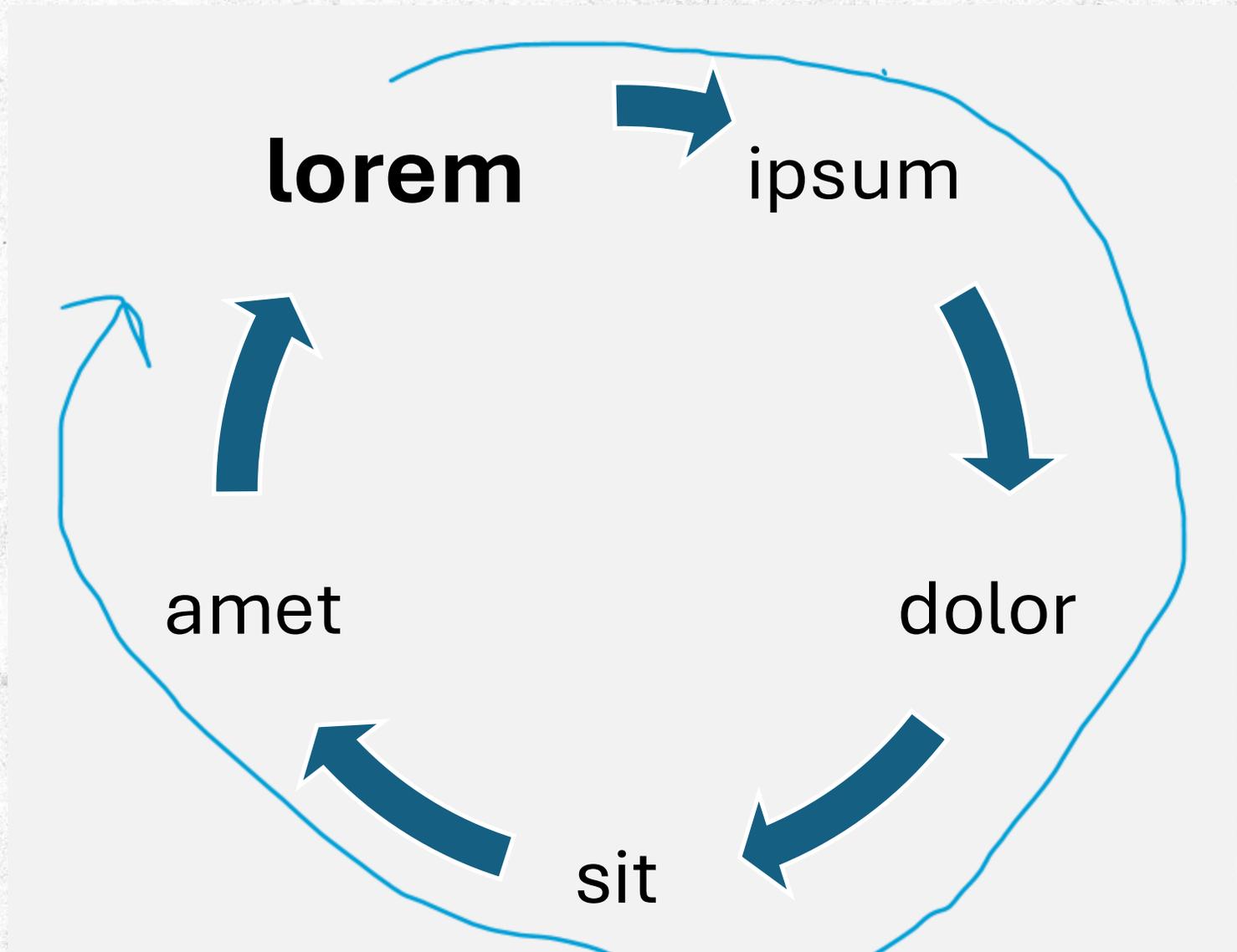
Key Results:

- Jumpstarted stagnant sales and surpassed net sales and sales margin plans for 8 consecutive quarters.
- Produced \$30 million new and incremental business in just 2 years.
- Penetrated 4,000 new distribution points including supermarkets, hardware stores, and auto centers.
- Re-focused sales team initiatives and strategies to dovetail customer initiatives.
- Played key role in pioneering Xxxxxxx's distribution expansion beyond traditional retail channels.

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Ordem de leitura

Ordem de leitura



O que pode uma fala?

Qual o poder das palavras pronunciadas, dentro de um enunciado do presidente?



As falas de ontem

literalmente foram para que pessoas adotem comportamentos específicos



AH! MAS A DIVULGAÇÃO DE CIÊNCIAS CRESCEU MUITO NESTES TEMPOS

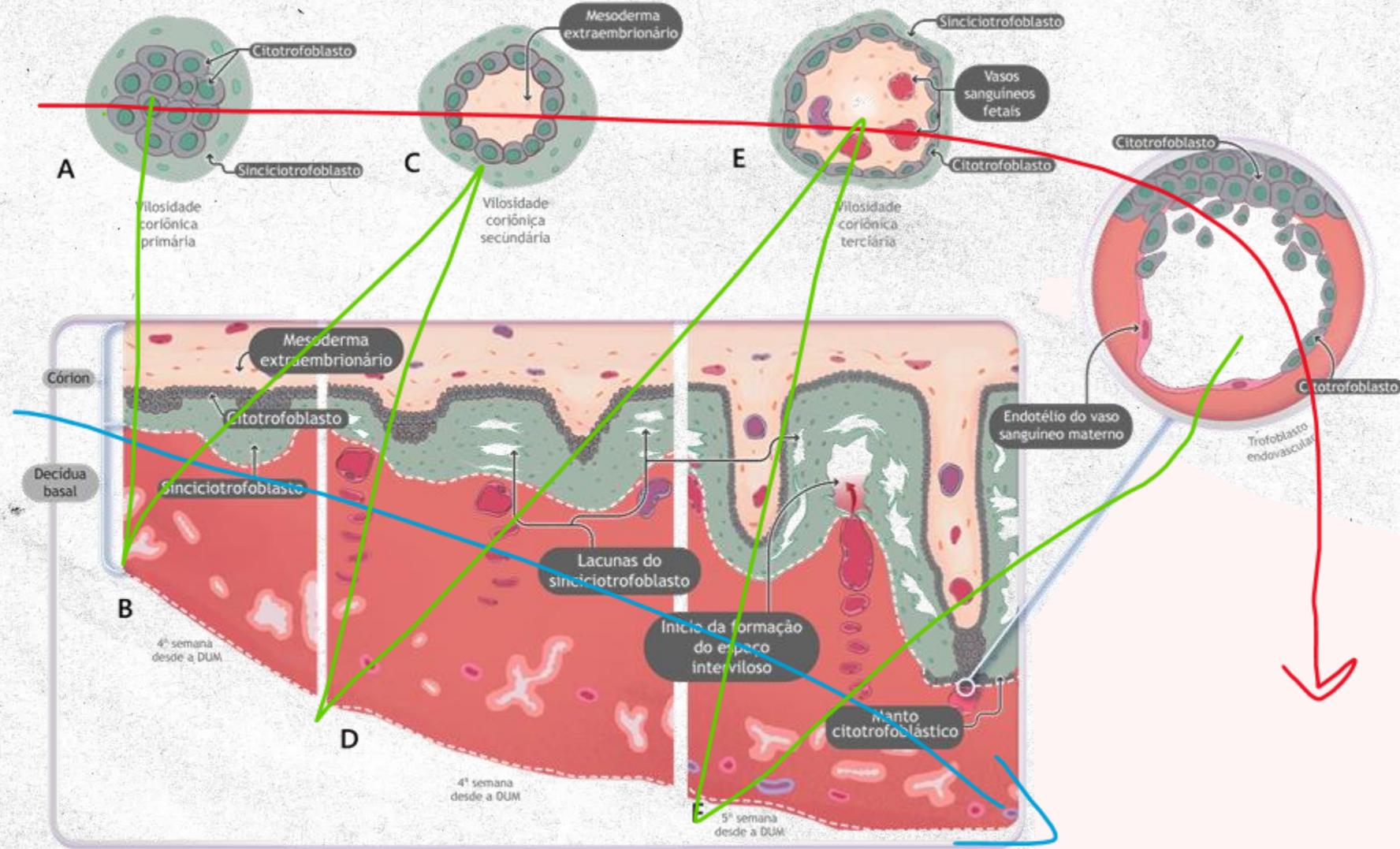
Mesmo crescendo em quantidade de seguidores, em debates propostos como comunidade.

Mesmo ganhando espaço na grande mídia.

ainda é insuficiente para nos estabelecermos como discurso.



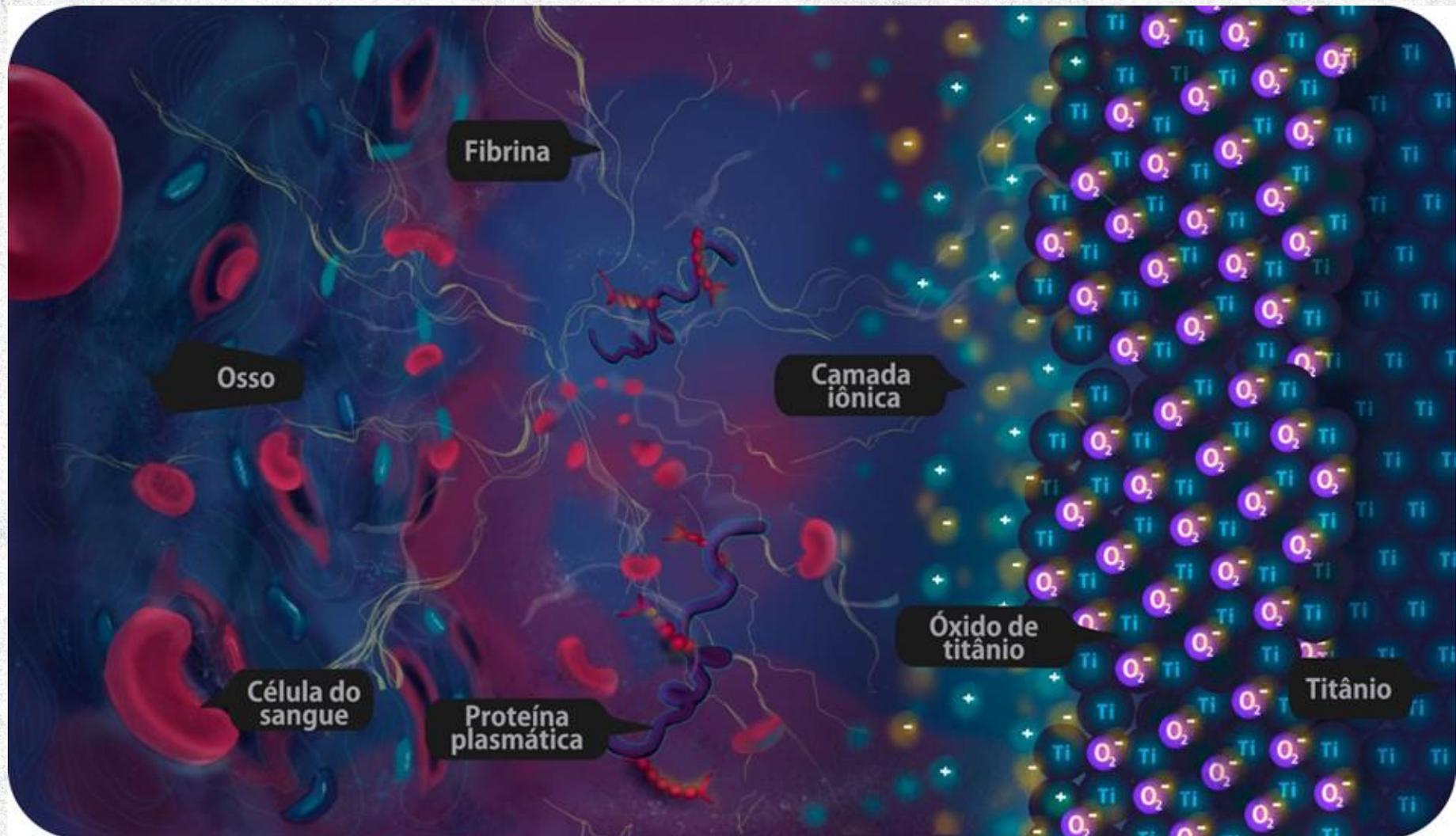
EVOLUÇÃO DAS VILOSIDADES CORIÔNICAS



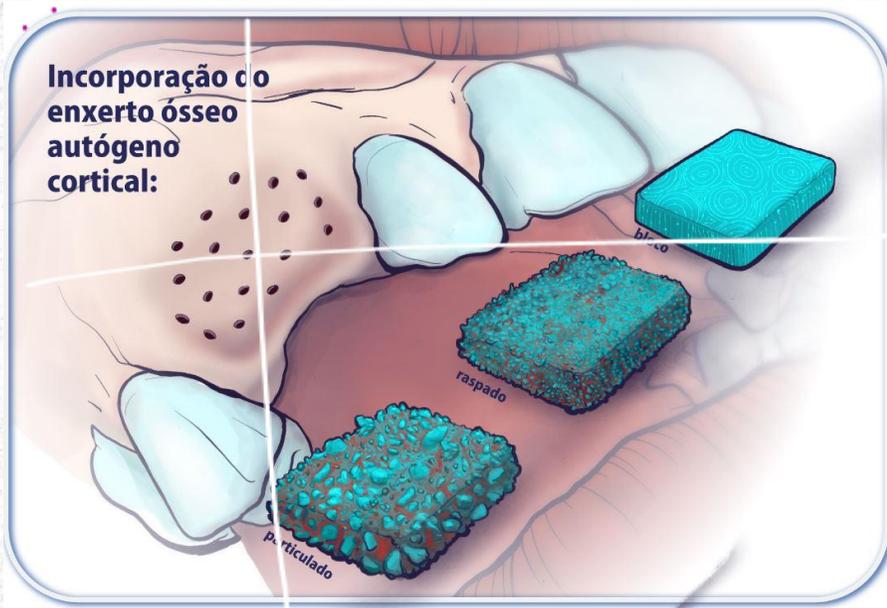
Ordem de leitura

RUDIMENTOS DE DESIGN

Ordem de leitura



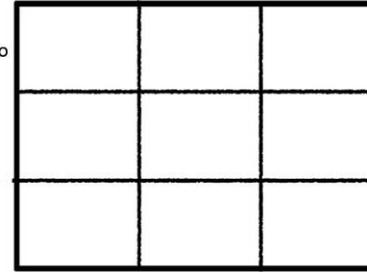
RUDIMENTOS DE DESIGN



Composição

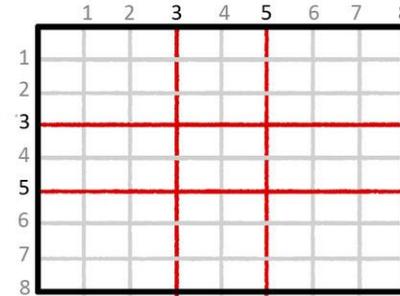
The Rule of Thirds

Divide your image into thirds & place your focal point(s) near the intersections

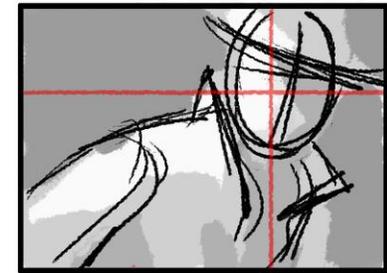
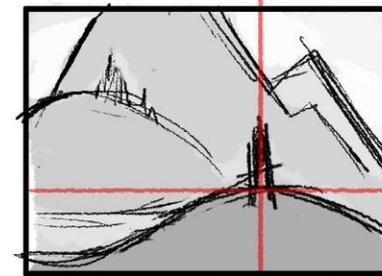
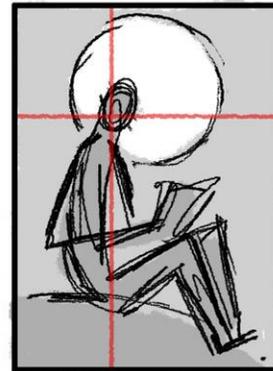


The Golden Mean

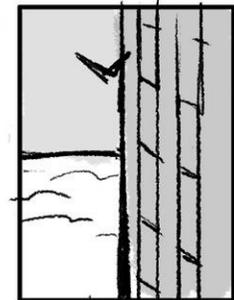
Divide your image into eighths & place your focal point(s) near intersections of 3/8 & 5/8



This results in a more pleasing, balanced image!



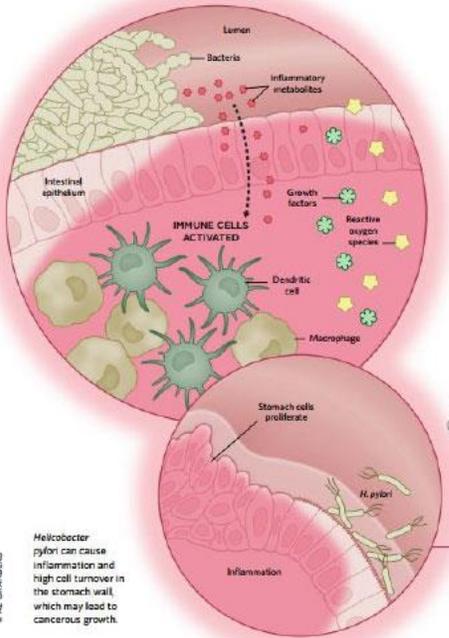
DO NOT bisect your image horizontally or vertically!
DO NOT place important objects too close to the edge!
(unless you want to create an uncomfortable composition)



RUDIMENTOS DE DESIGN

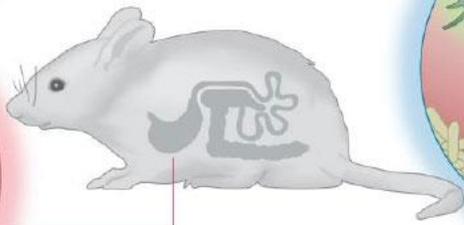
HOW THE MICROBIOME PROMOTES CANCER

Gut bacteria can dial up inflammation locally in the colon, as well as in other parts of the body, leading to the release of reactive oxygen species, which damage cells and DNA, and of growth factors that spur tumor growth and blood vessel formation.



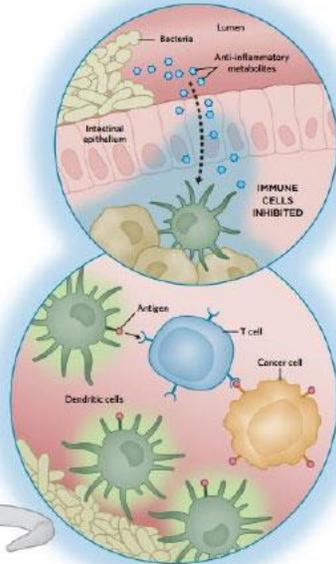
IMMUNE INFLUENCE

In recent years, research has demonstrated that microbes living in and on the mammalian body can affect cancer risk, as well as responses to cancer treatment. Although the details of this microbe-cancer link remain unclear, investigators suspect that the microbiome's ability to modulate inflammation and train immune cells to react to tumors is to blame. Here are some of the hypotheses that have come out of recent research in rodents for how gut bacteria shape immunity and influence cancer.

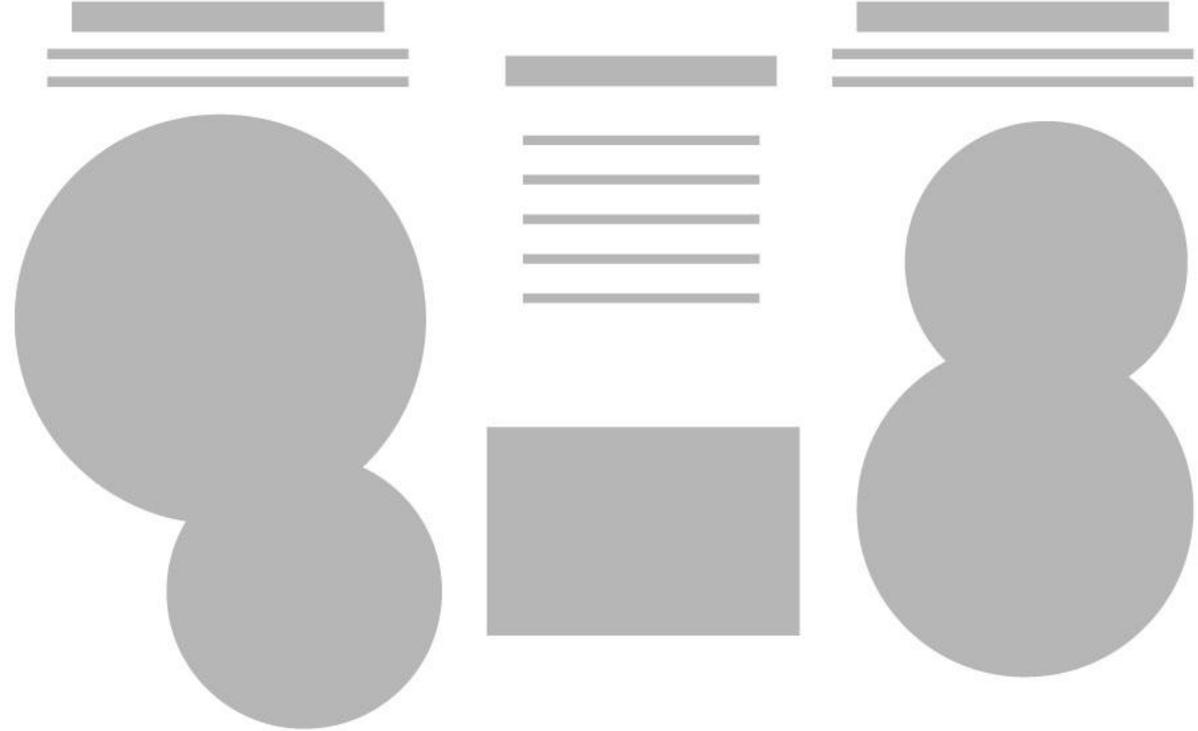


HOW THE MICROBIOME STEMS CANCER

Gut bacteria can also produce factors that lower inflammation and slow tumor growth.



Some gut bacteria (e.g. *Bifidobacterium*) appear to activate dendritic cells, which present cancer-cell antigens to T cells that in turn kill the cancer cells.

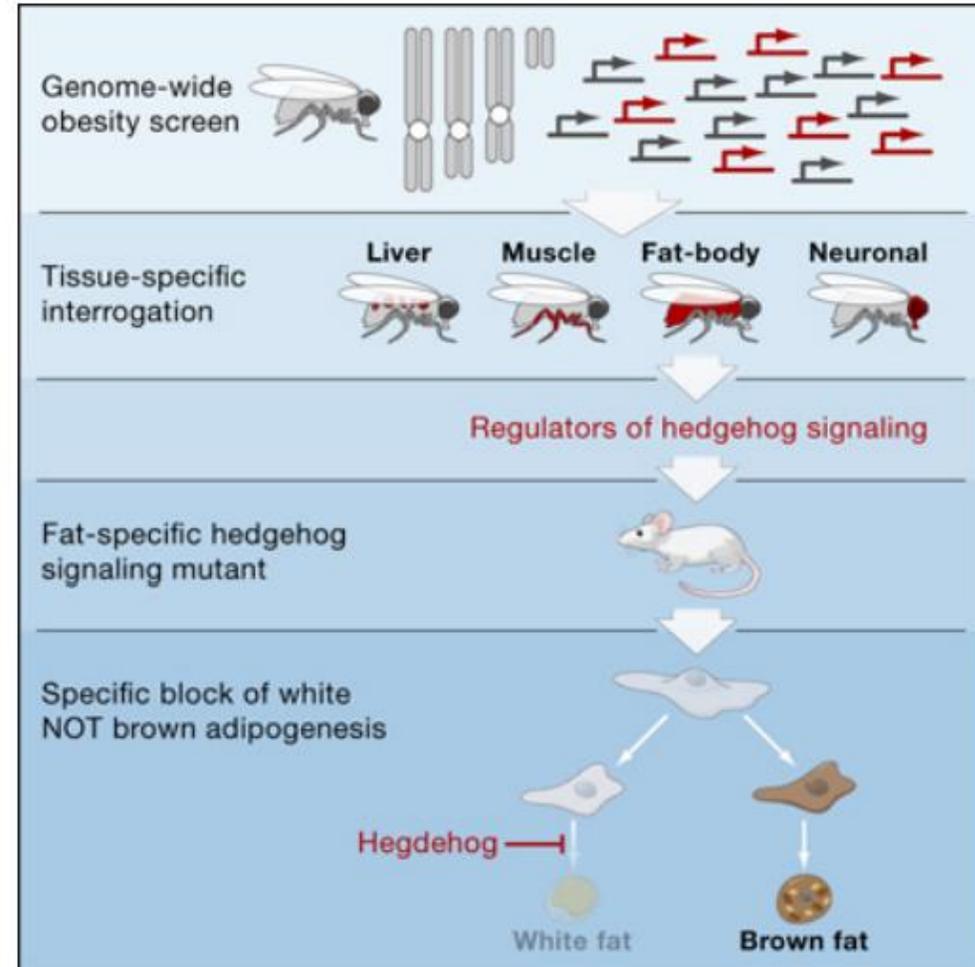
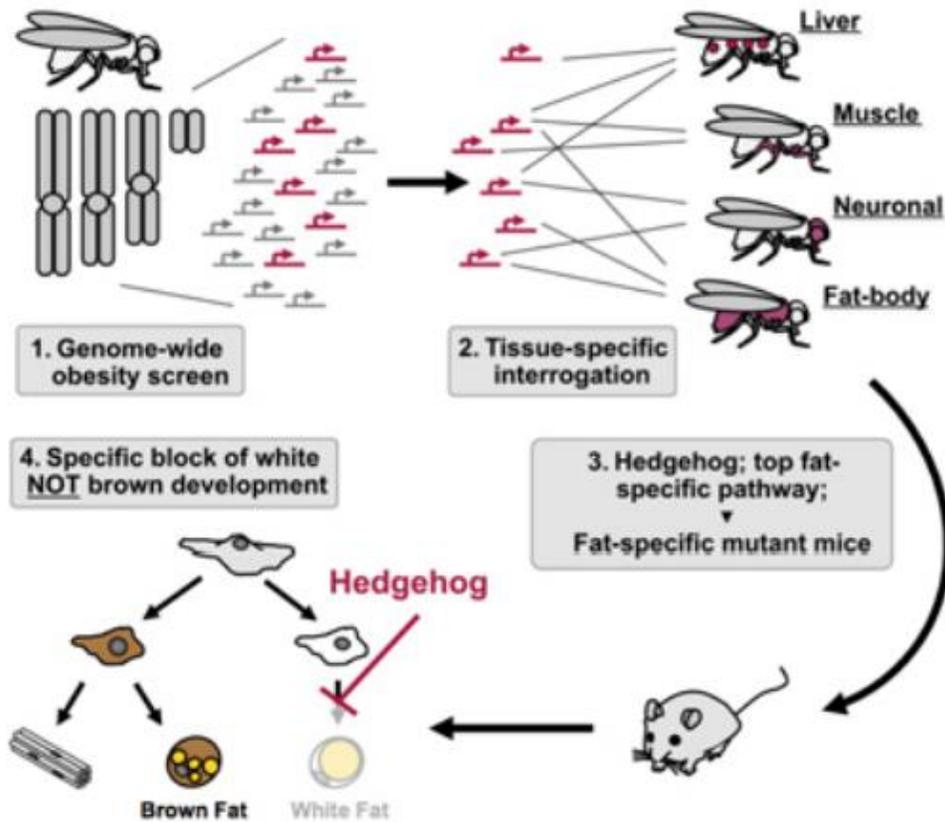


<https://blog.mindthegraph.com/flow-graphical-abstract/#.Wcu5FWWhSzIU>

http://www.cell.com/pb/assets/raw/shared/figureguidelines/GA_guide.pdf

Antes

Depois



ordem de leitura

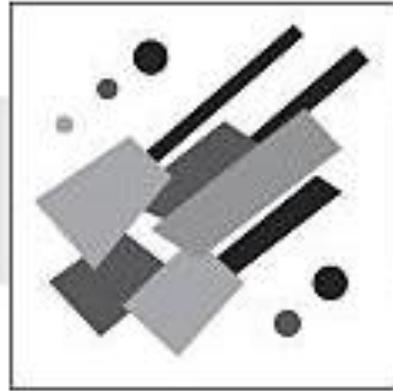
composição

alinhamento

Closed



Open



Static



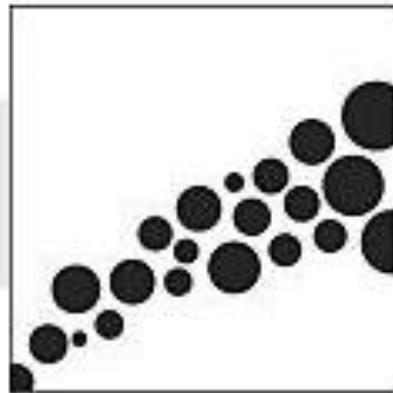
Dynamic



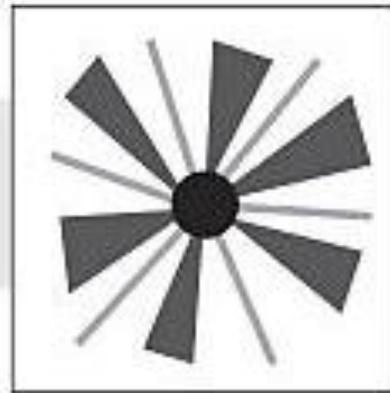
Nuance



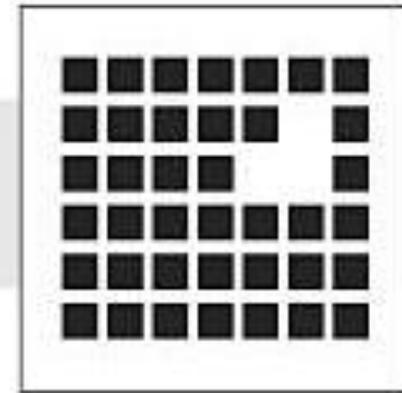
Contrast

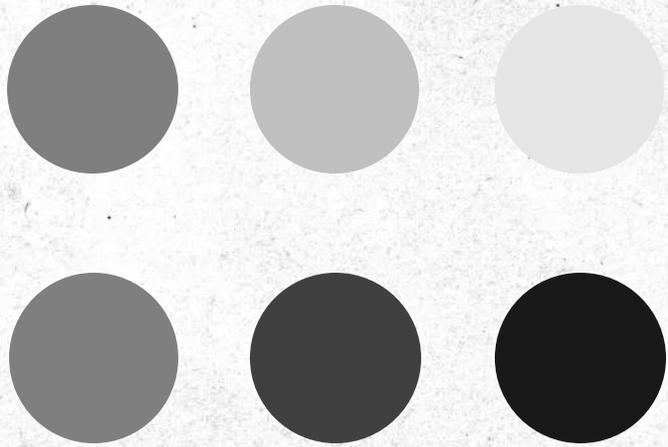


Elements group

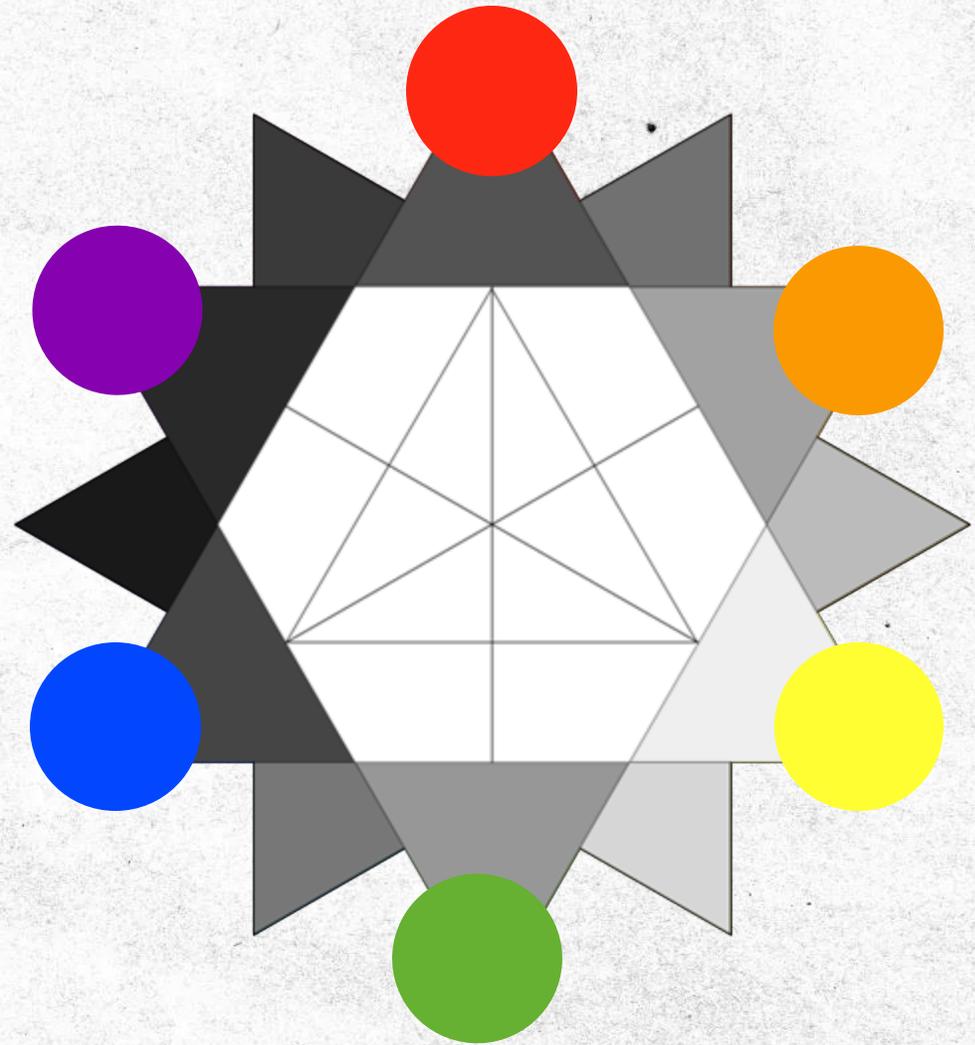


Pause





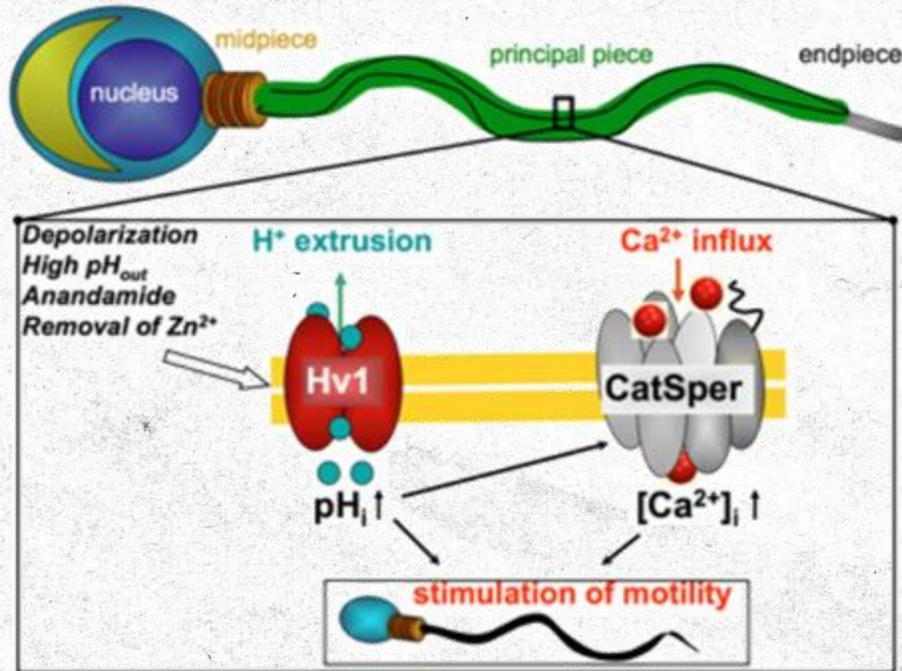
Cores & paleta





Redução da paleta de cores

BEFORE



Cell, 2009

Dominante (~60%)



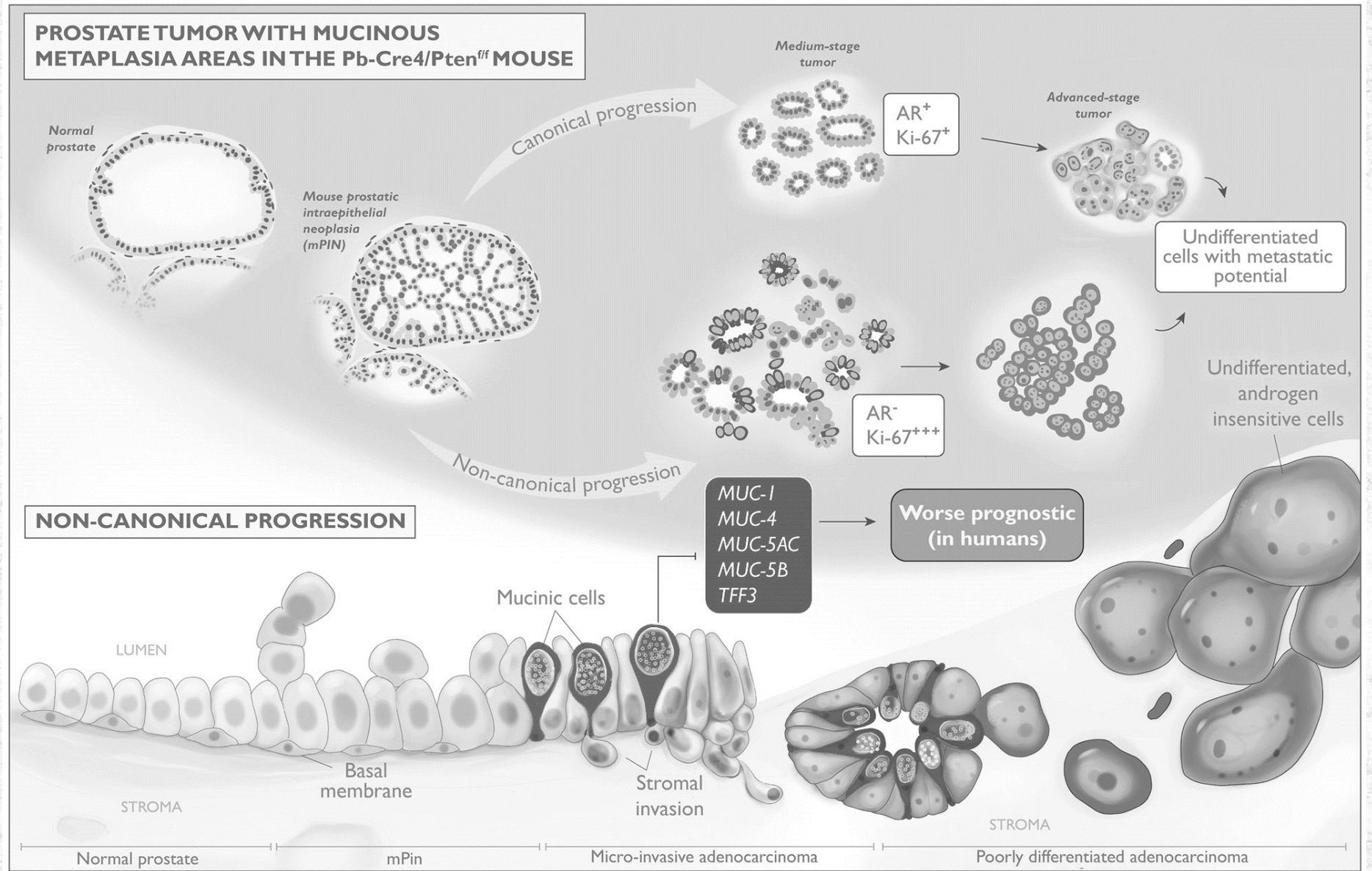
Tônica (~30%)



Acento (~10%)



Cores & paleta



Ordem de leitura

NÃO é tão IMPORTANTE

Texto sobrando



INFO importante

desnecessário

**Acabei sendo prolixa sem que-
rer**

INFO importante

Meu logo



Ordem de leitura

Texto sobrando

INFO importante



Não é tão importante

**Acabei sendo
prolixa sem querer
(acontece)**



Info importante

Meu logo

A

SERIFADA

A

NÃO-SERIFADA

LEGIBILIDADE
LEGIBILIDADE
L E S S B S L S D Q D E
L E G I B I L I D A D E

Q

DECORATIVA

A

A

Manuscrita

Tipografia

- Comic Sans
- Arial
- Verdana
- Calibri
- Tahoma
- Century Gothic

ESPAÇAMENTO

ESPAÇAMENTO

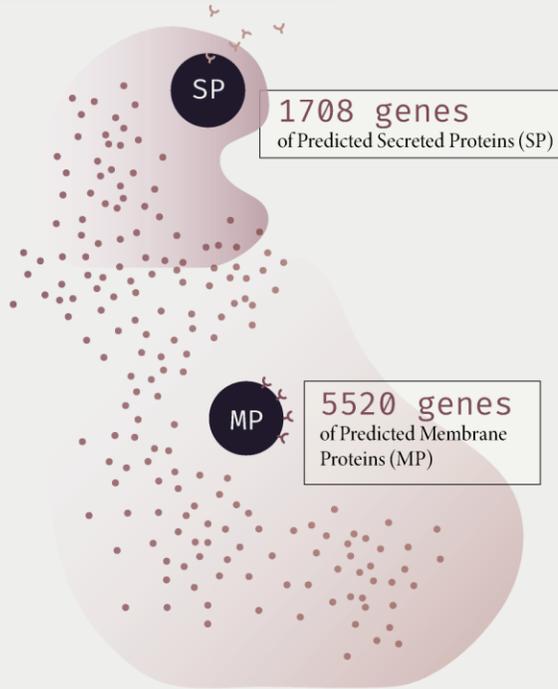
E S P A Ç A M E N T O



Prostate cancer secretome and membrane proteome from *Pten* conditional knockout mice

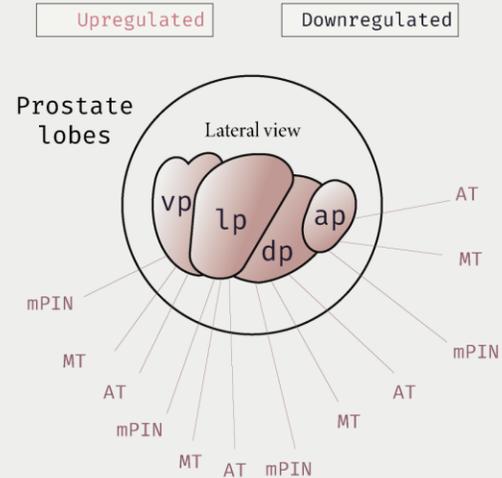
Datasets

THE HUMAN PROTEIN ATLAS



RNAseq-GSE94574 NCBI GEO reference number

Differential gene expression of transcripts



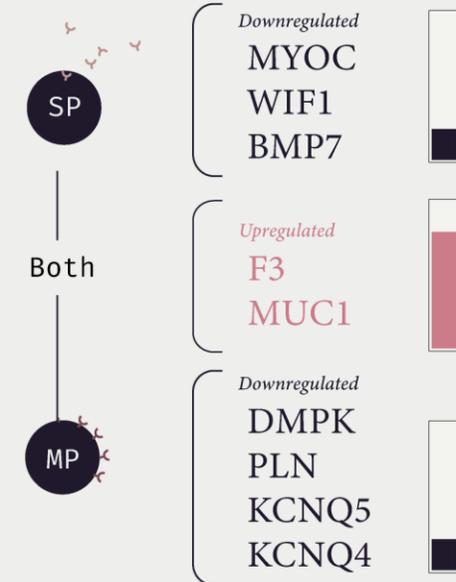
PCa Stages

mPIN MT AT

The common upregulated proteins clusters and common downregulated protein clusters in the three stages of PCa progression were selected.

STRING + functional analysis
PPI Network

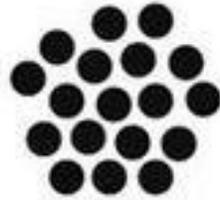
Nine membrane and secreted targets in PCa



► Secreted and membrane proteins as potential biomarkers

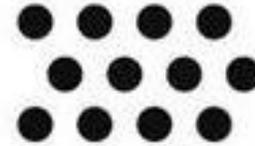
► Patients with PCa are associated with worse overall survival and probability of freedom from biochemical recurrence (BRC)

Unity / Harmony



PROXIMITY

A sense of the distance between elements



CONTINUATION

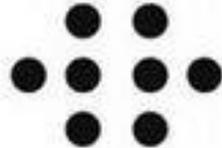
The sense of having a line or pattern extend



SIMILARITY

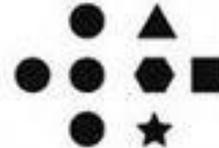
Ability to seem repeatable with other elements

Balance



SYMMETRY

Elements on either side of the axis are arranged similarly



ASYMMETRY

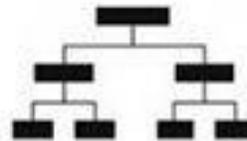
Elements on each side differ in shape but still are in visual equilibrium



RADIAL

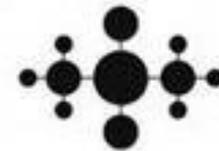
Elements are arranged around a circular form

Hierarchy



TREES

Elements arranged in the order of a tree with a trunk, branches & sub branches



NESTS

Elements mapped on to each other as parents, children & grand children



WEIGHT

Elements of the same weight belong to the same class of hierarchical positions