



Mecanismos de Lesão Celular

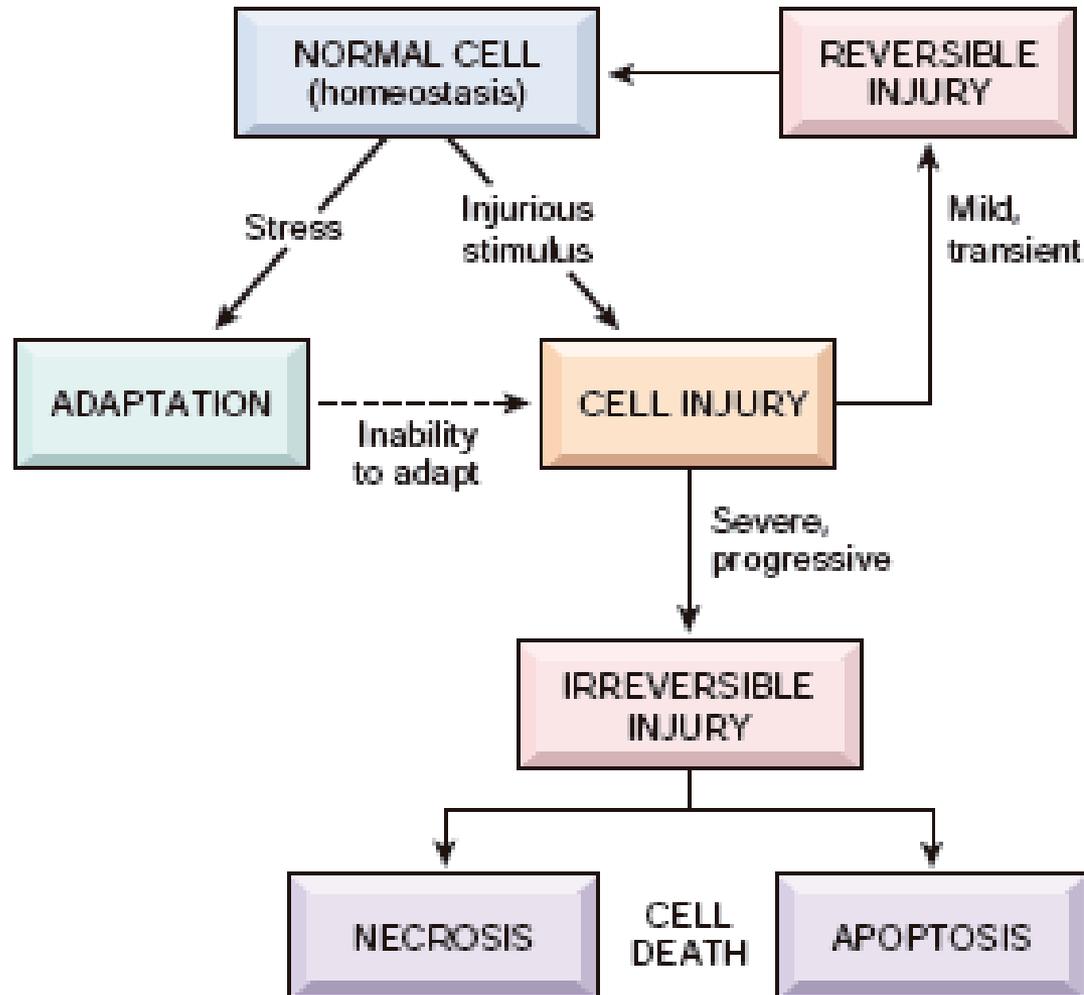
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Resposta celular ao estímulo / agressão



Robbins, Pathologic basis of disease, 9th edition

Lesão celular

Adaptação

- Hipertensão Arterial
- Doença de Alzheimer

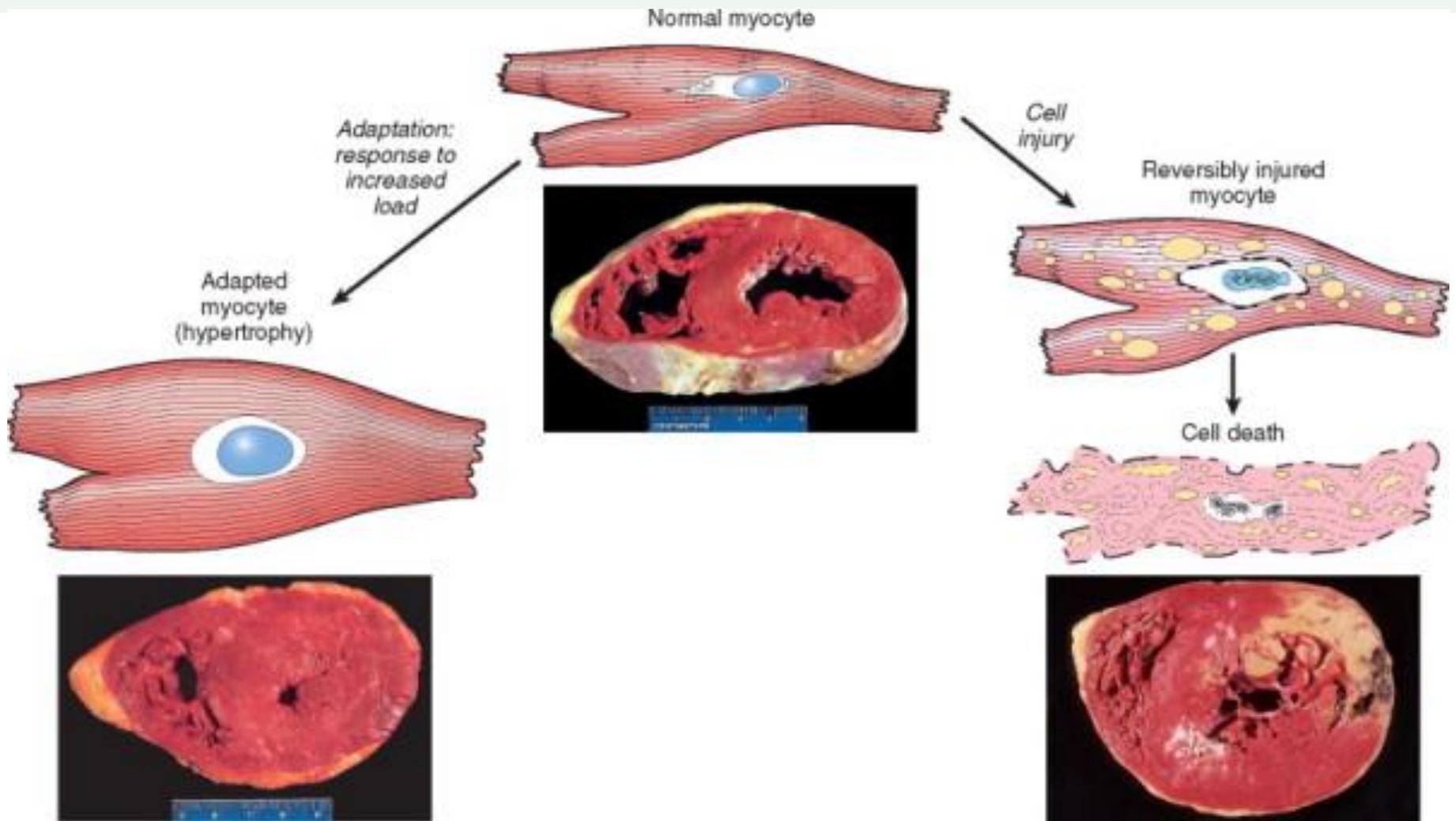
Lesão Reversível

- Hipóxia
- Acidente Isquêmico Transitório

Lesão Irreversível

- Hepatite Aguda
- Infarto agudo do miocárdio

Resposta celular ao estímulo / agressão

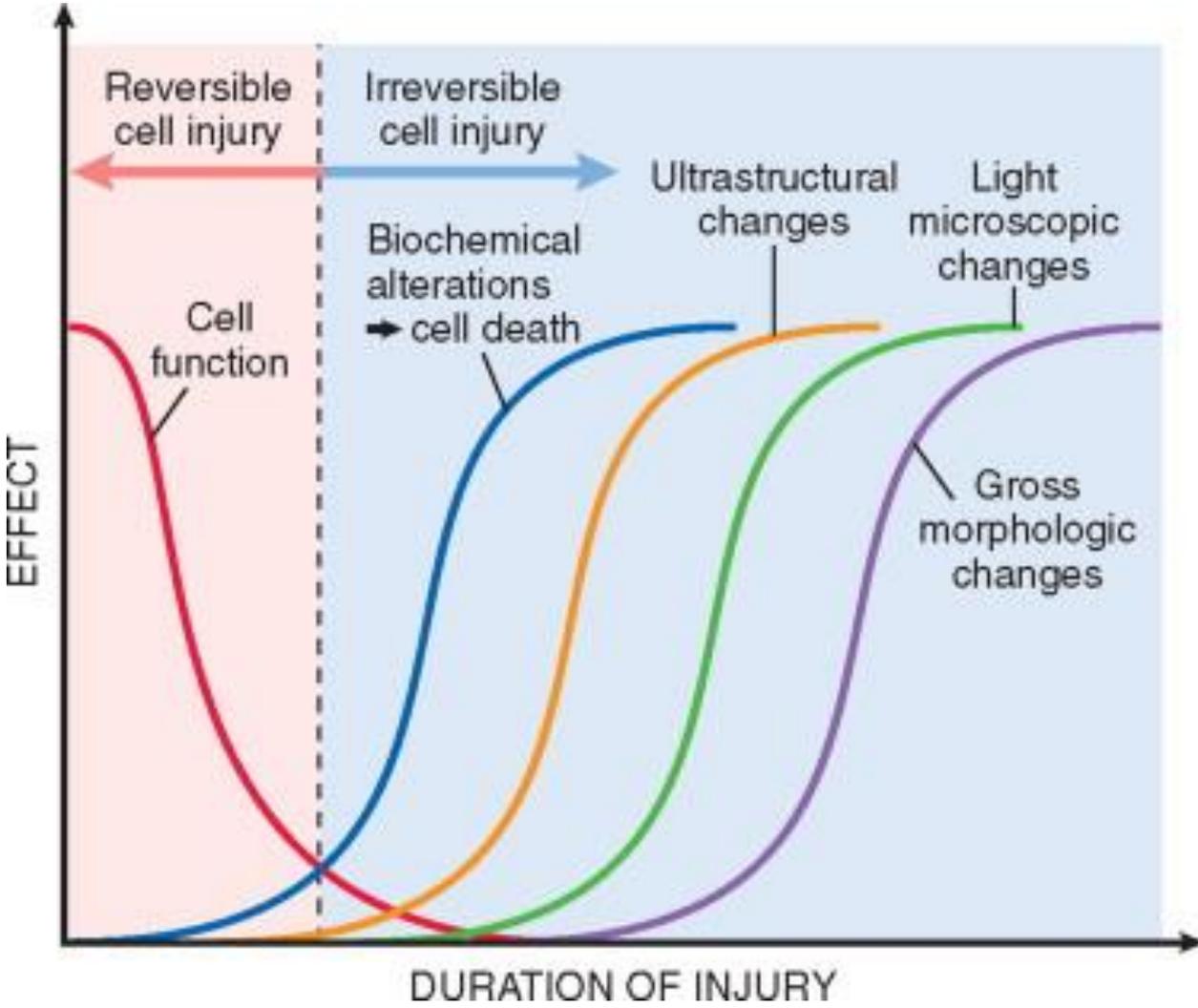


Robbins, Pathologic basis of disease, 9th edition

Causas de lesão celular

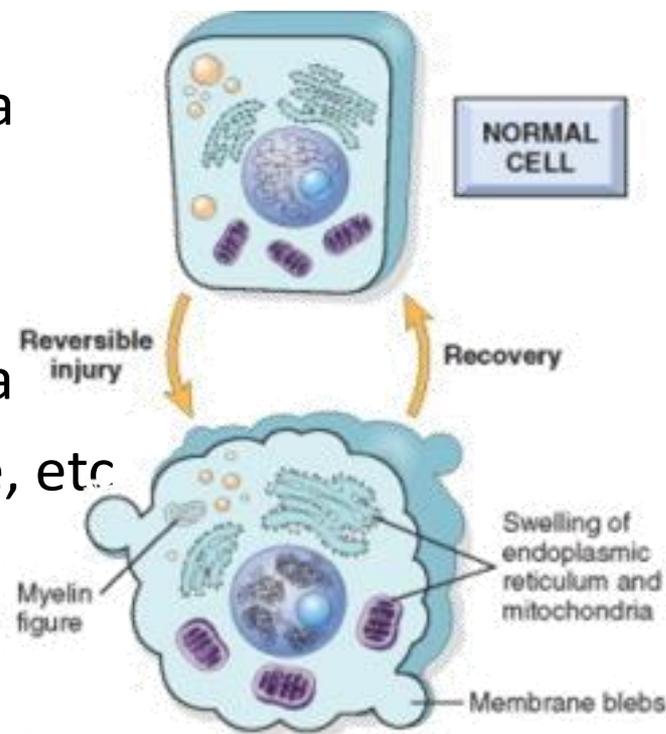
- Privação de Oxigênio
- Agentes físicos
- Agentes químicos e drogas
- Agentes Infecciosos
- Reações imunológicas
- Desarranjos genéticos
- Desbalanço nutricional

Lesão celular

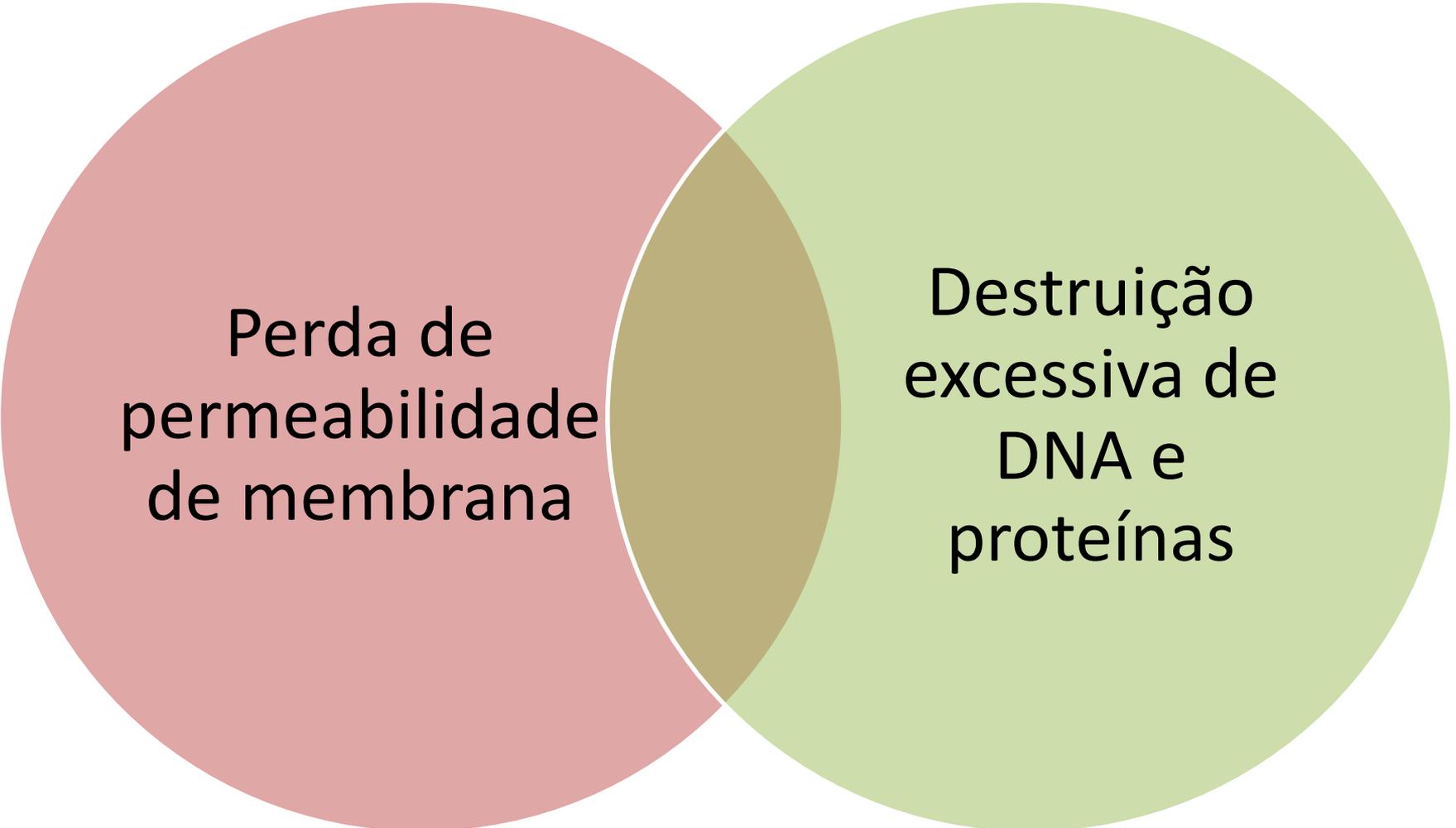


Lesão celular reversível

- Microscópico
 - Edema celular e alteração gordurosa
- Ultraestrutural
 - Alterações de membrana plasmática
 - “blebs, perda de microvilosidade, etc
 - Alterações mitocondriais
 - Edema e corpos amorfos
 - Dilatação do Retículo Endoplasmático
 - Desligamento dos polissomos
 - Alterações nucleares
 - Desagregação de elementos fibrilares e granulares



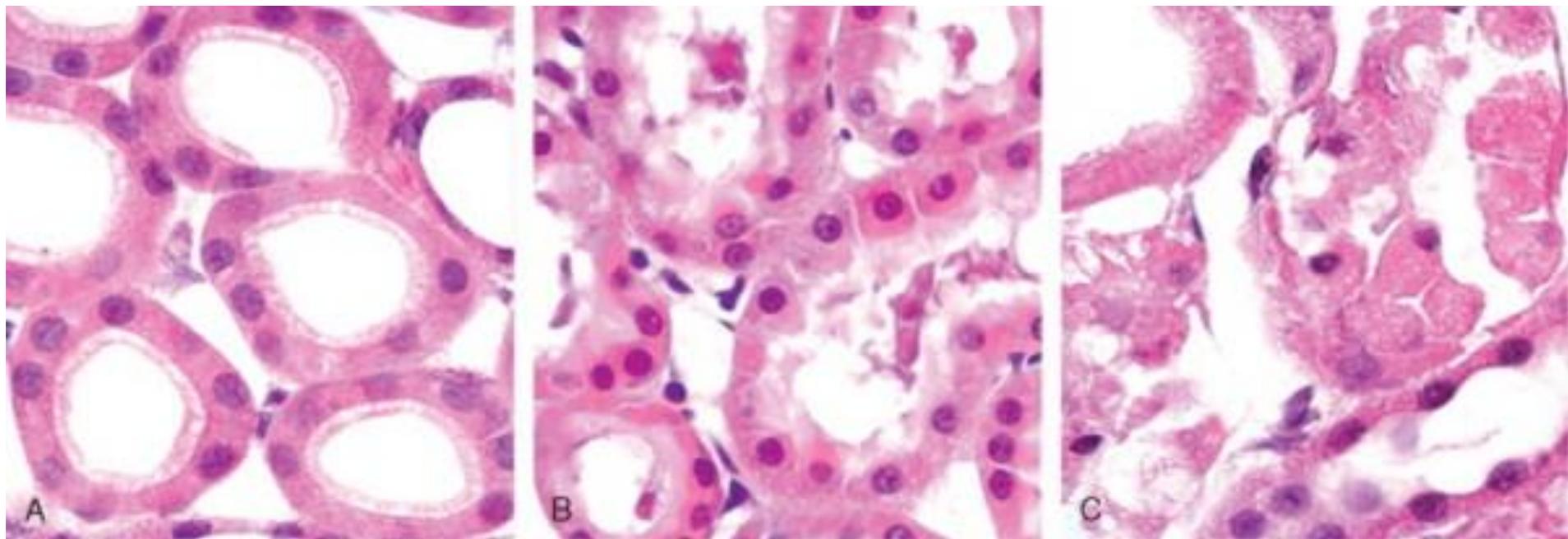
Lesão celular – critérios de irreversibilidade



Perda de permeabilidade de membrana

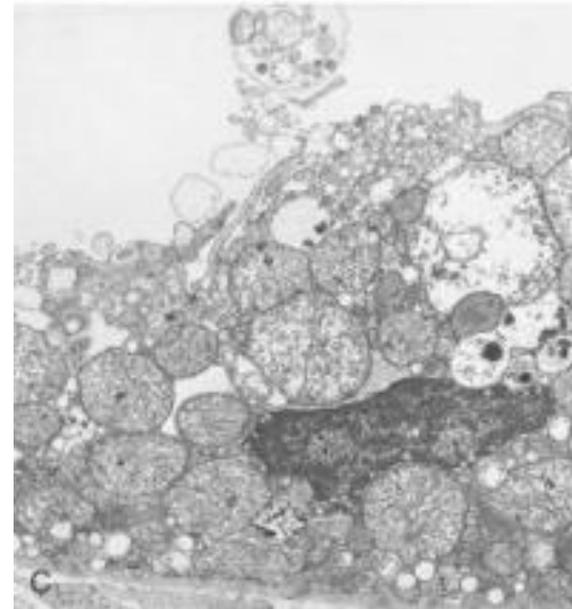
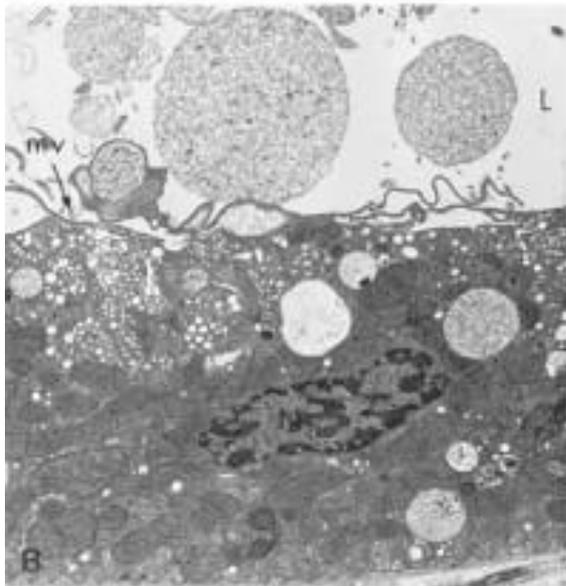
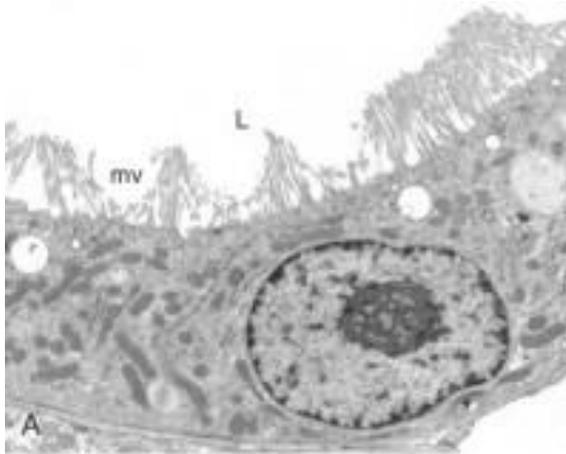
Destruição excessiva de DNA e proteínas

Lesão Celular

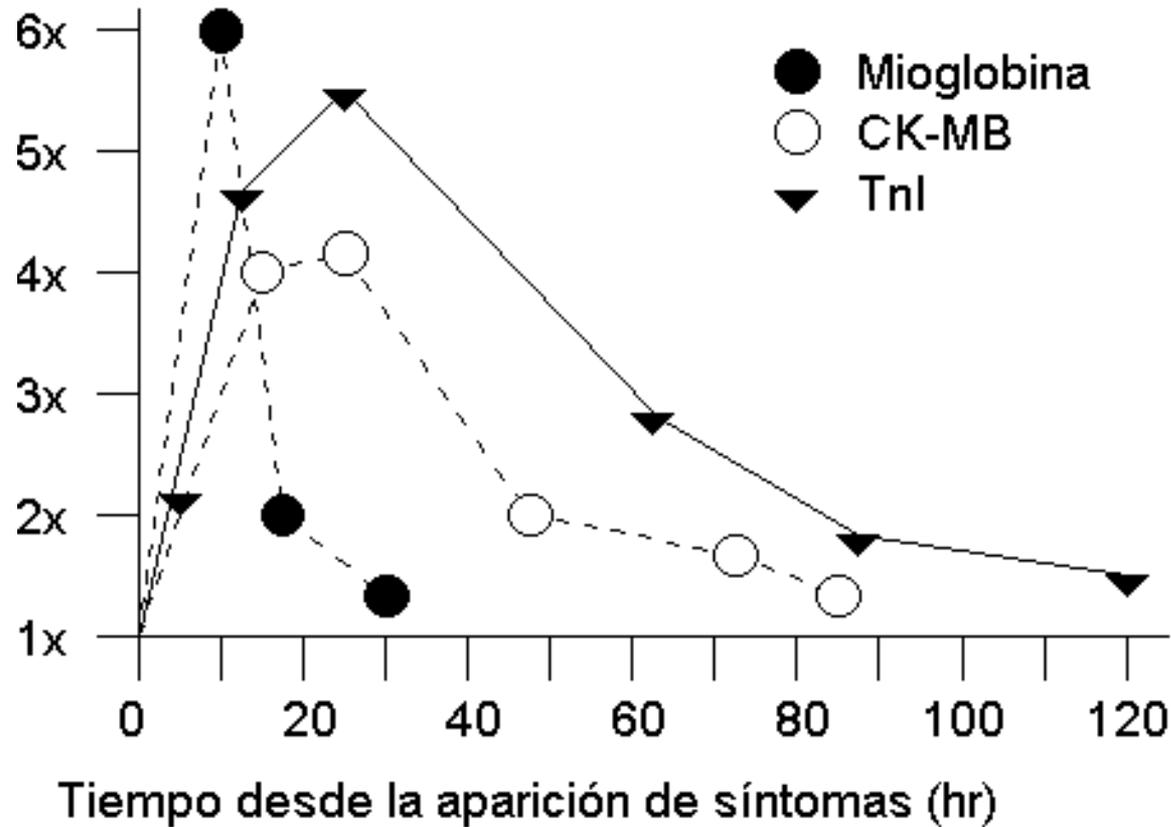


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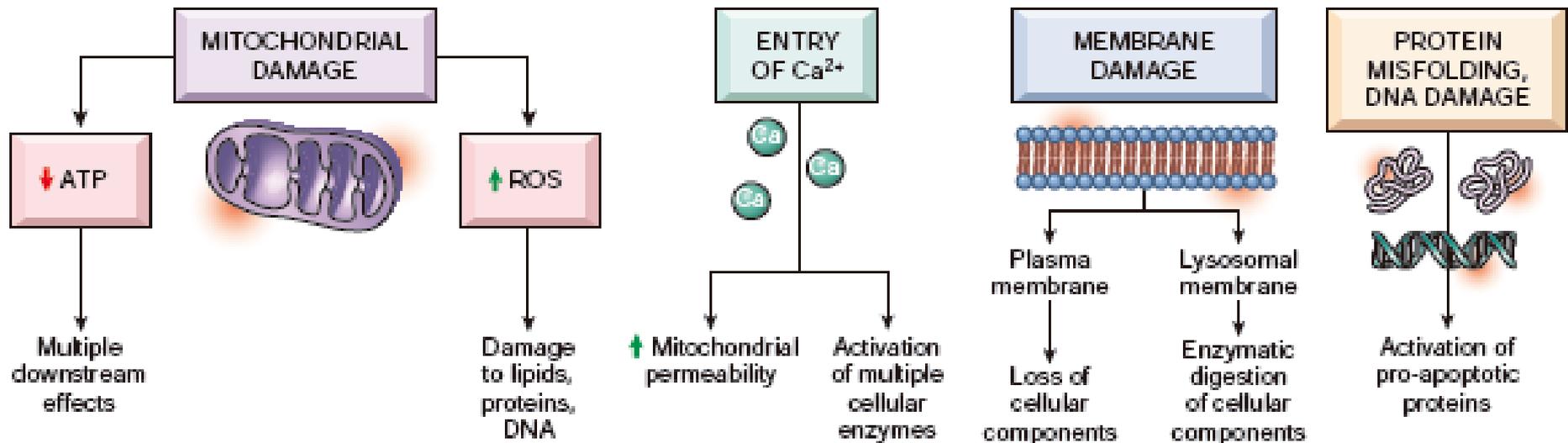


Lesão Celular – Aplicação clínica

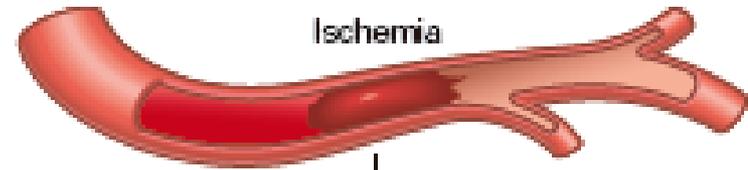
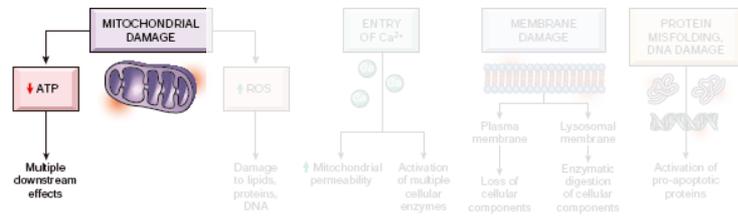


<http://www.monografias.com/trabajos12/troponi/>

Lesão Celular – Mecanismos



Lesão Celular – Mecanismos



↓ Oxidative phosphorylation

↓ ATP

↓ Na⁺ pump
 ↑ Influx of Ca²⁺, H₂O, and Na⁺
 ↑ Efflux of K⁺
 ER swelling
 Cellular swelling
 Loss of microvilli
 Blebs

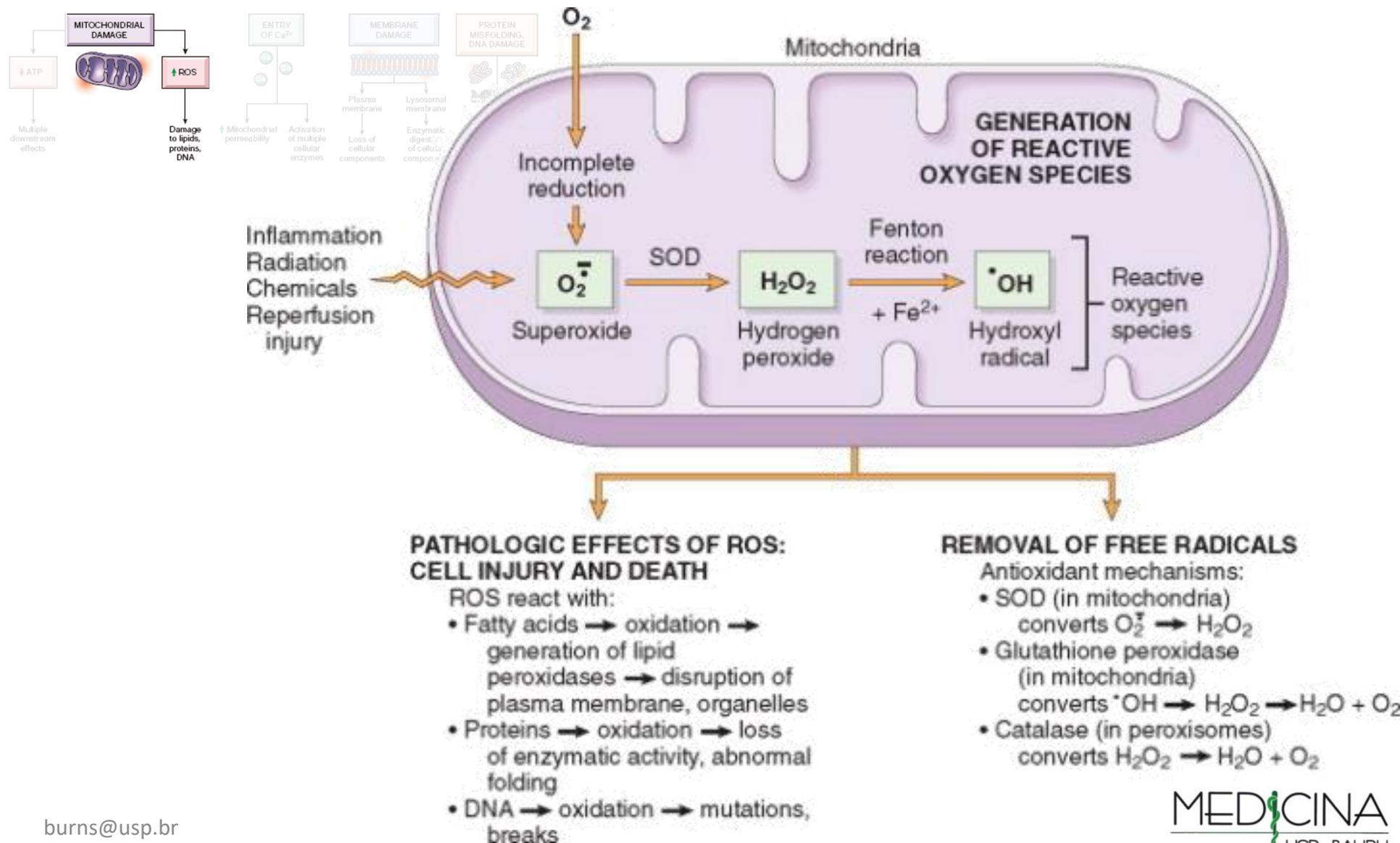
↑ Anaerobic glycolysis
 ↓ Glycogen
 ↑ Lactic acid → ↓ pH

Detachment of ribosomes
 ↓ Protein synthesis

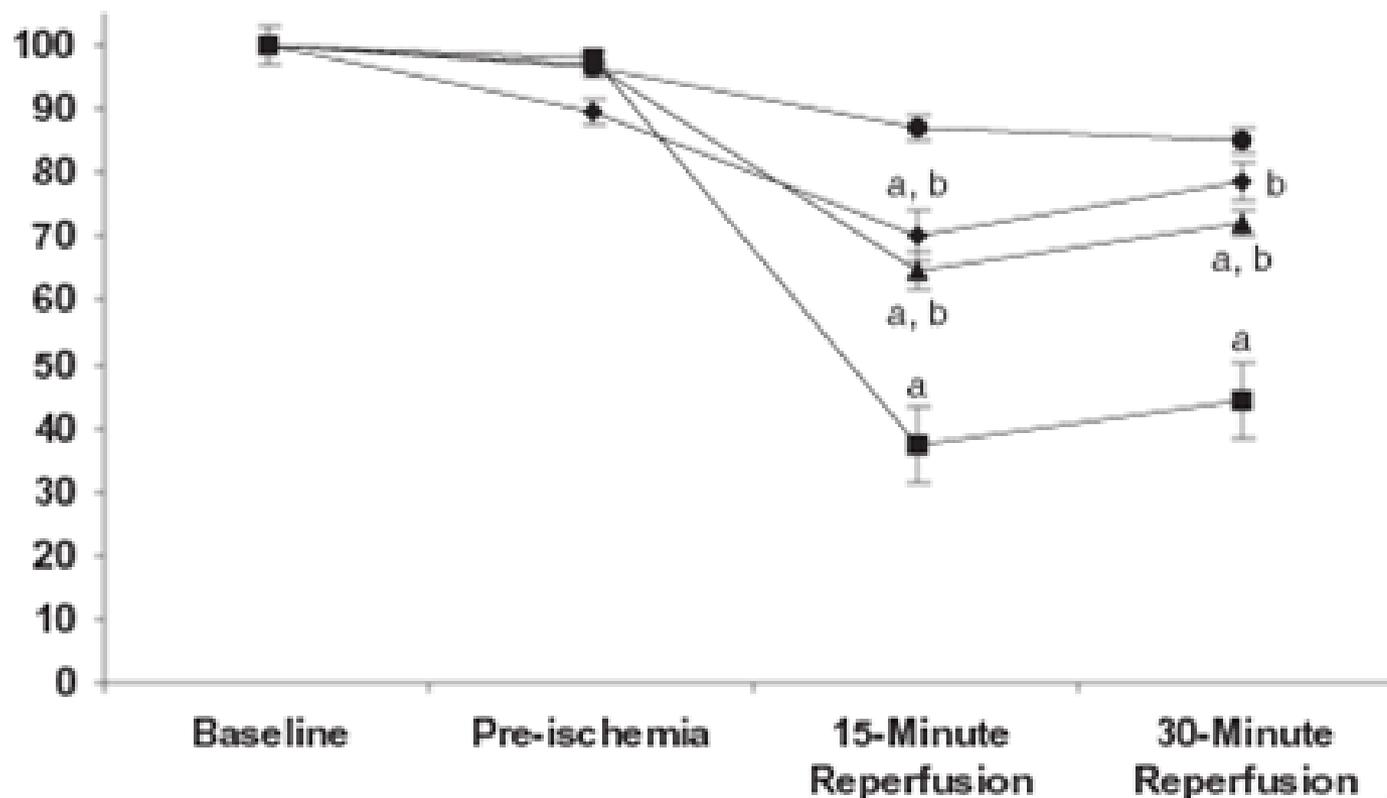
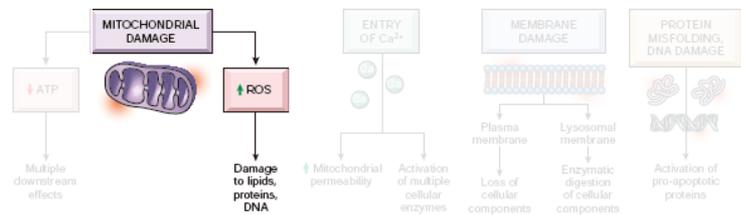
Clumping of nuclear chromatin



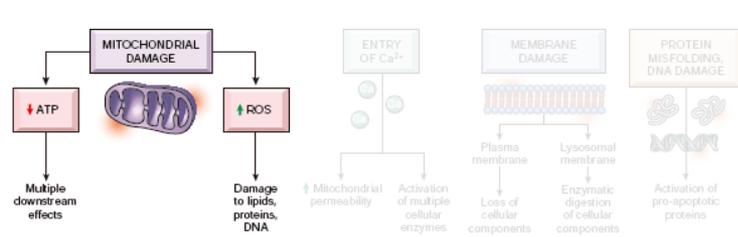
Lesão Celular – Mecanismos



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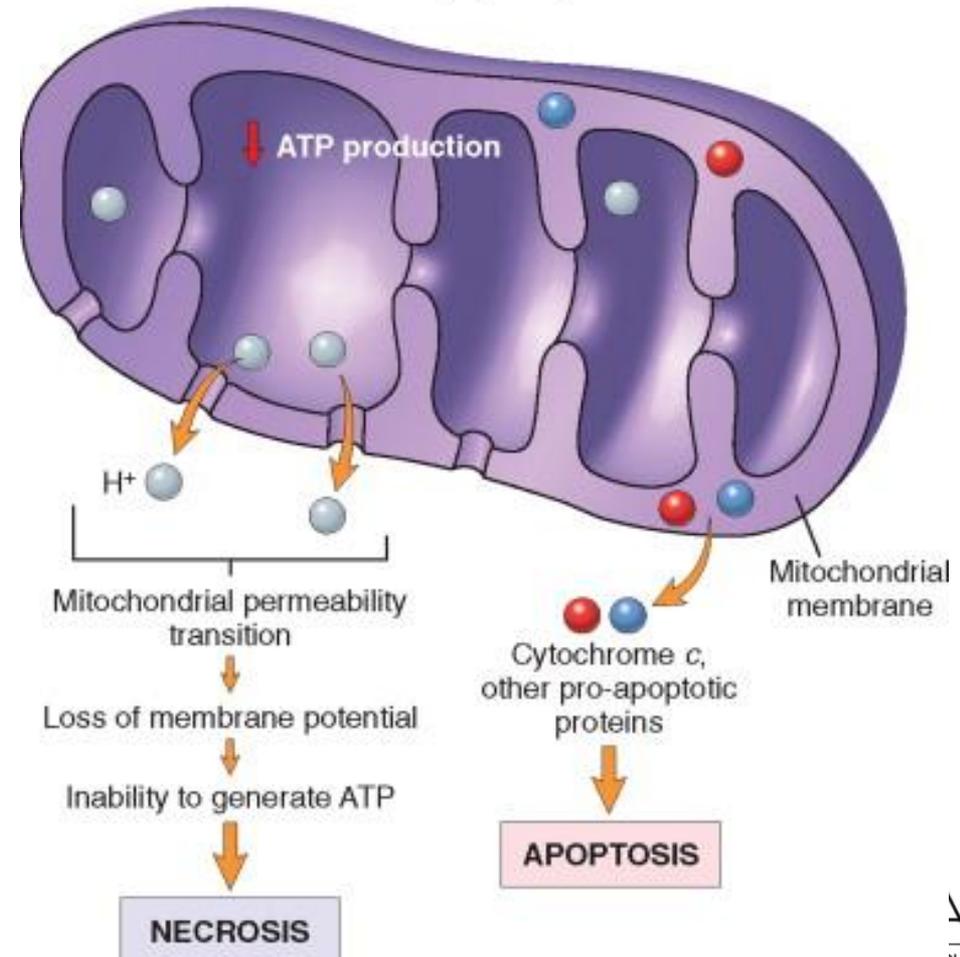
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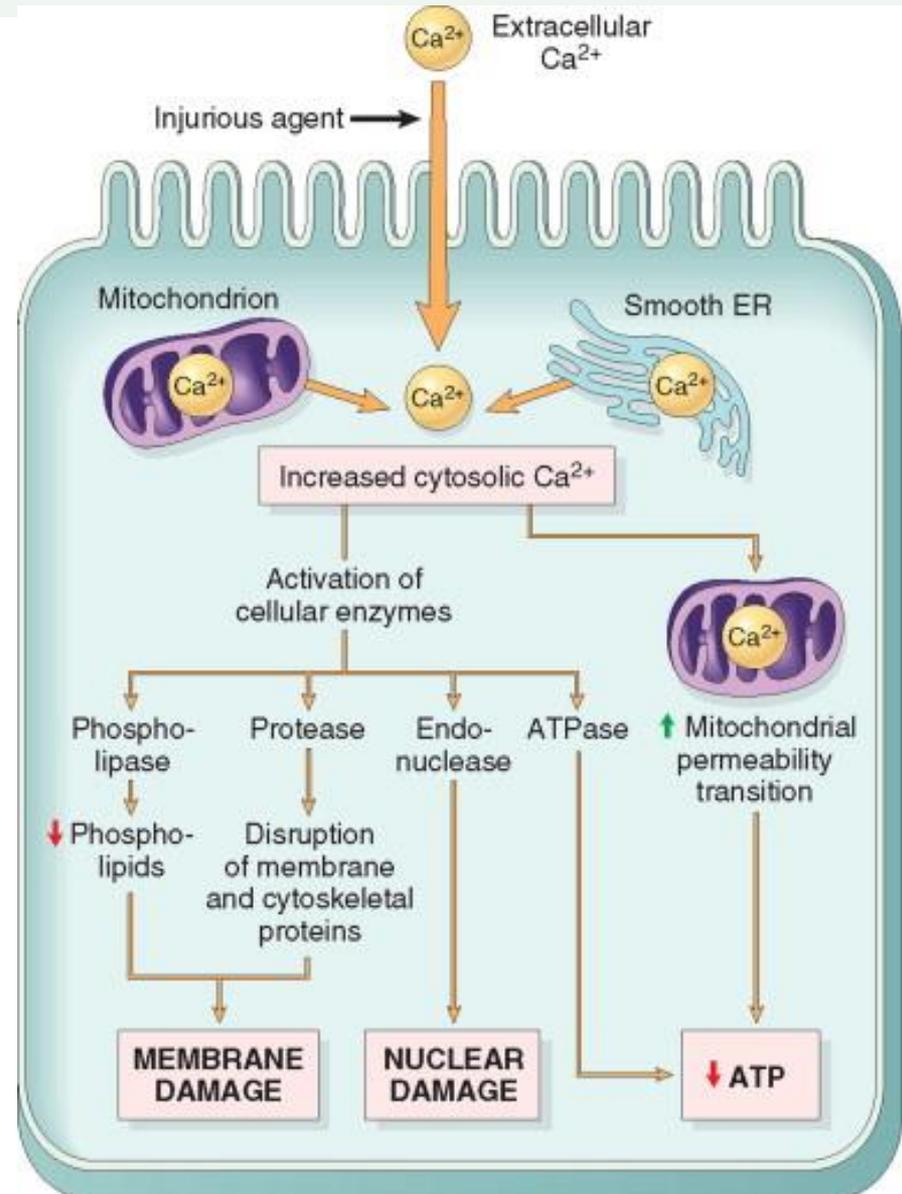
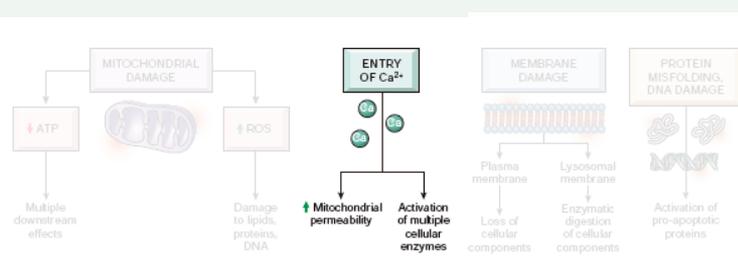
Increased cytosolic Ca²⁺,
reactive oxygen species (oxidative stress),
lipid peroxidation

↓

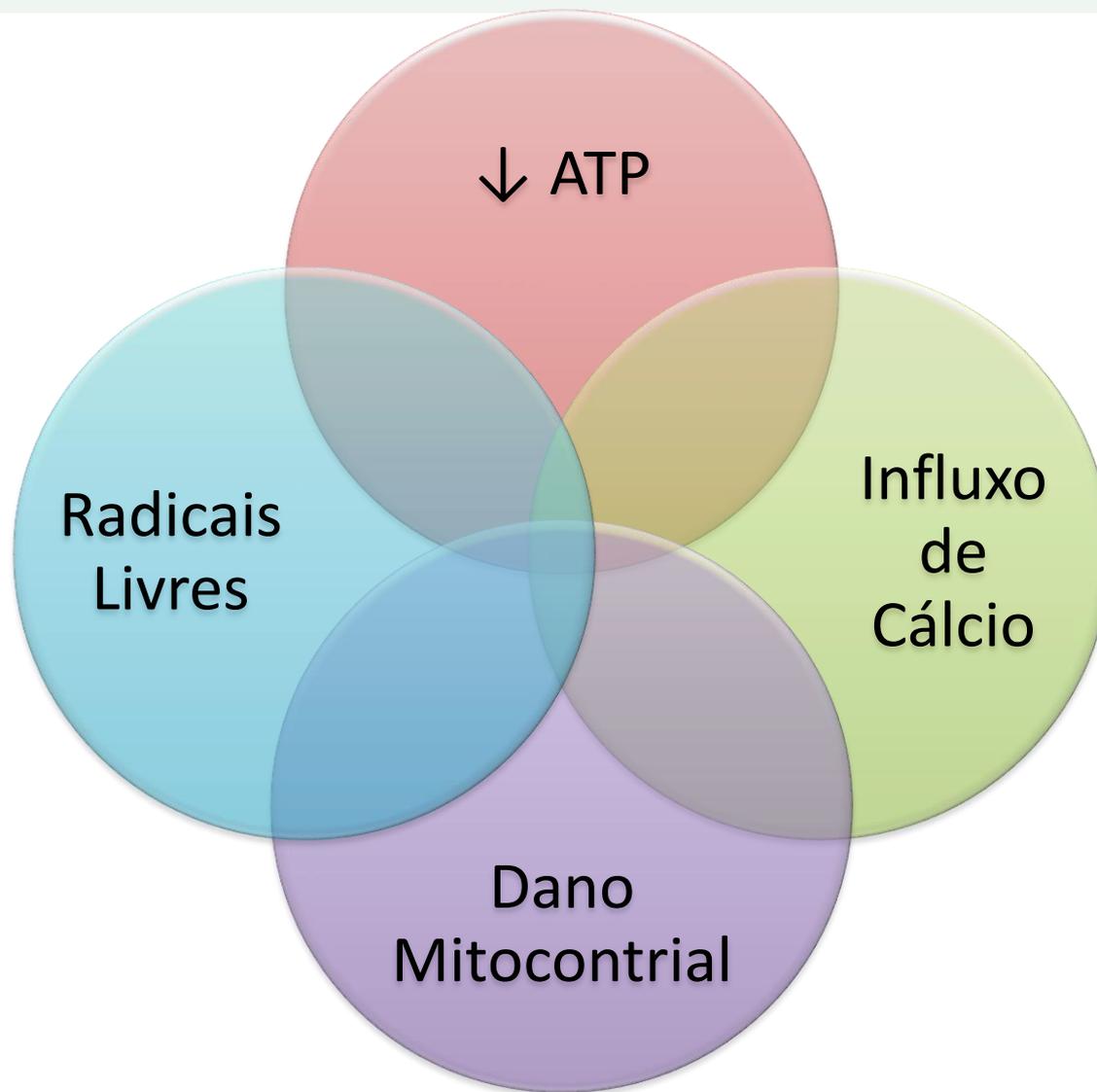
Mitochondrial injury or dysfunction



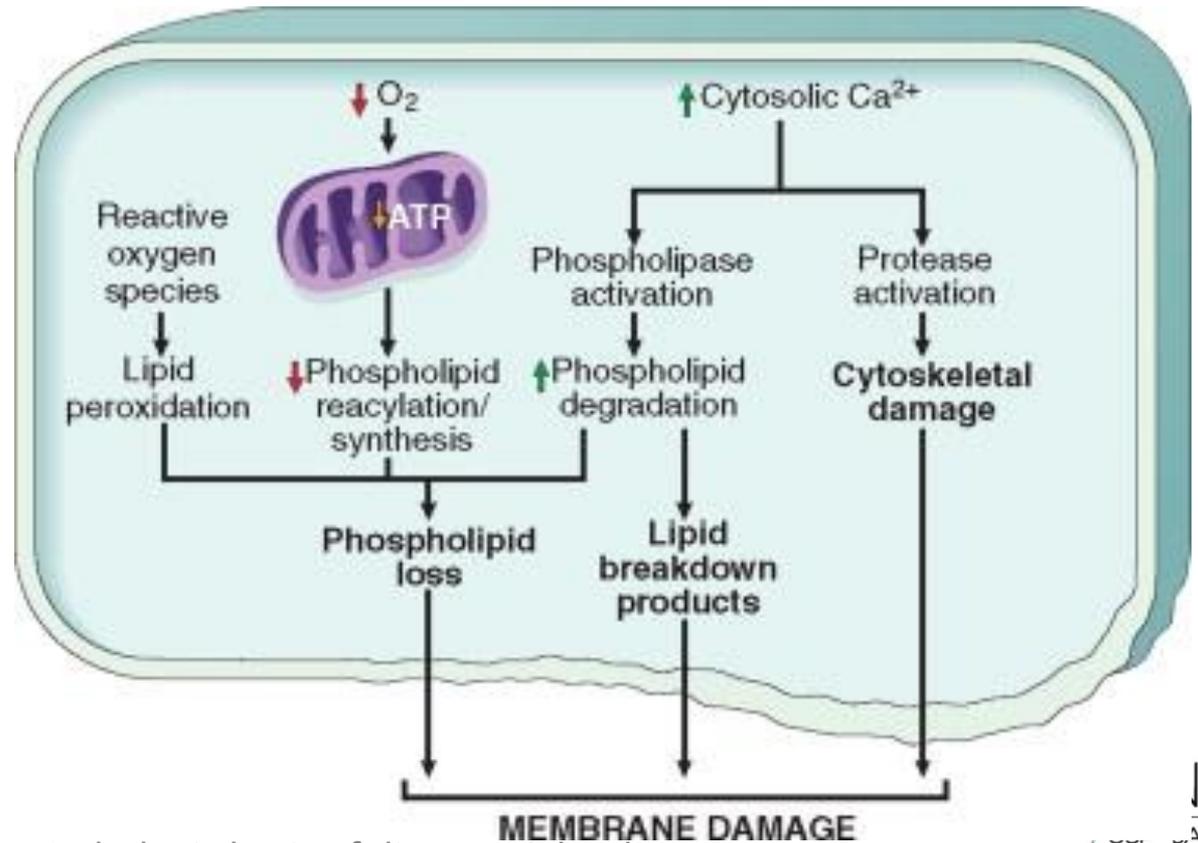
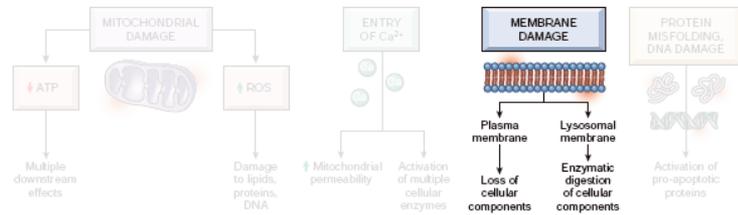
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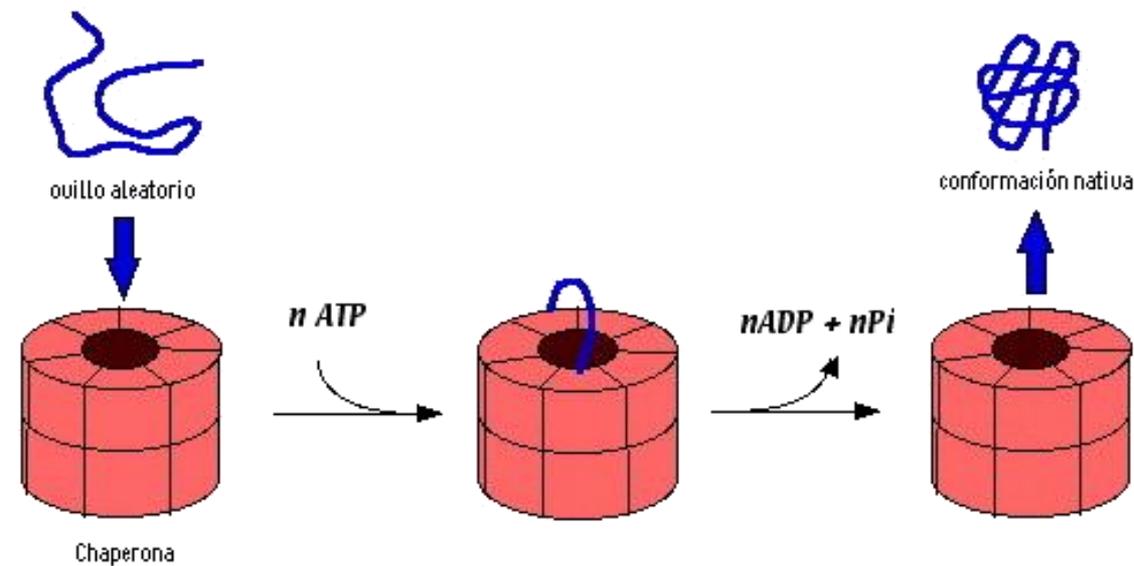
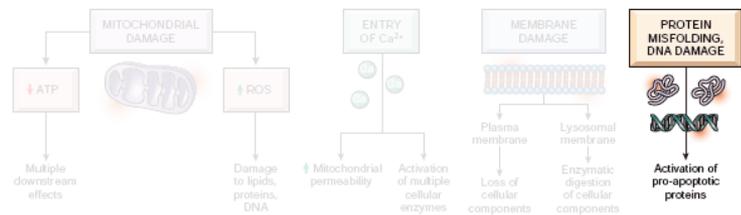
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http://www.biorom.uma.es/contenido/av_biomo/Mat4.html

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