



Médecine haute altitude

Complications liées à l'ascension en montagne et
changements physiologiques lors de l'exposition à
l'altitude

Dr Éric Contant

CCMF-MU

FAWM, DiMM

Conflits d'Intérêts



Objectifs



Comprendre physiologie de la haute altitude

Tour de table des pathologies

**Outiller les professionnels à
conseiller un patient ou équipe**

Messages Clés



Ascension progressive

Il n'y a pas beaucoup de raccourcis en altitude

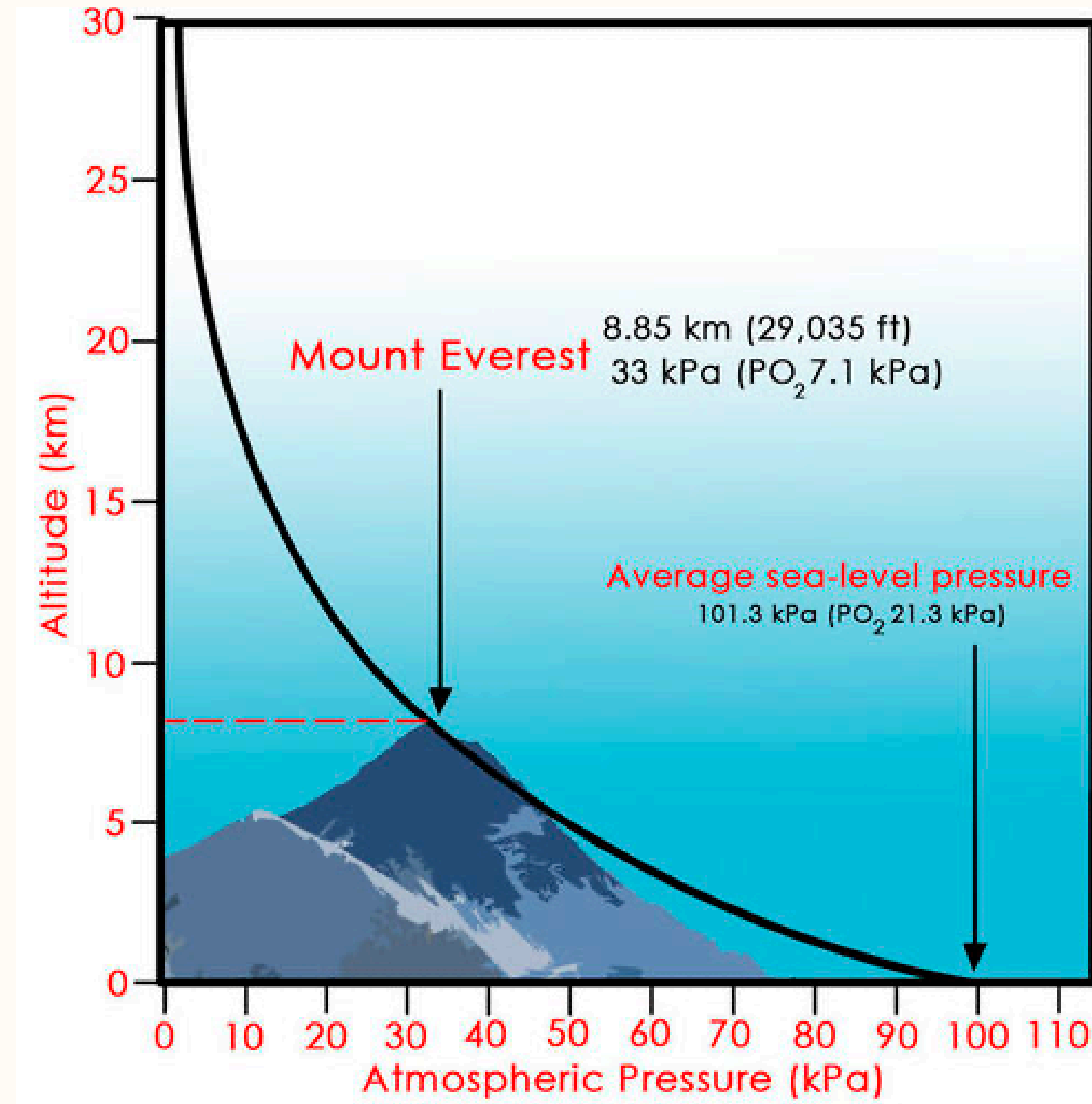
Garder le Viagra pour la couchette

Mon expérience

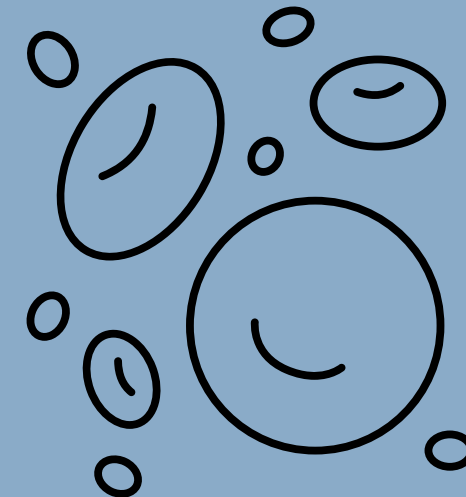
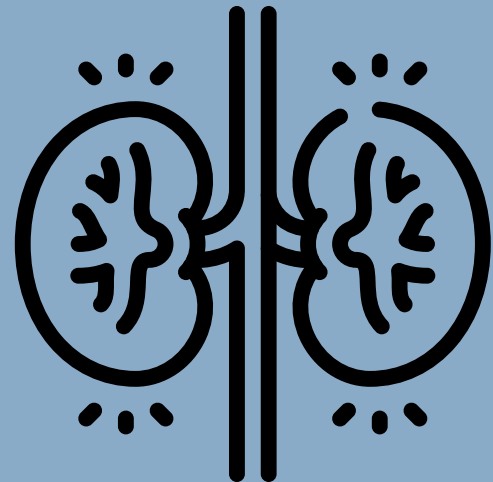
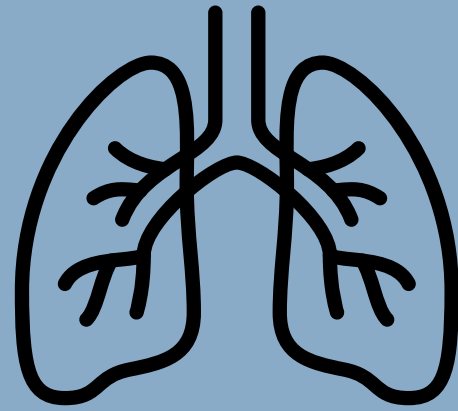




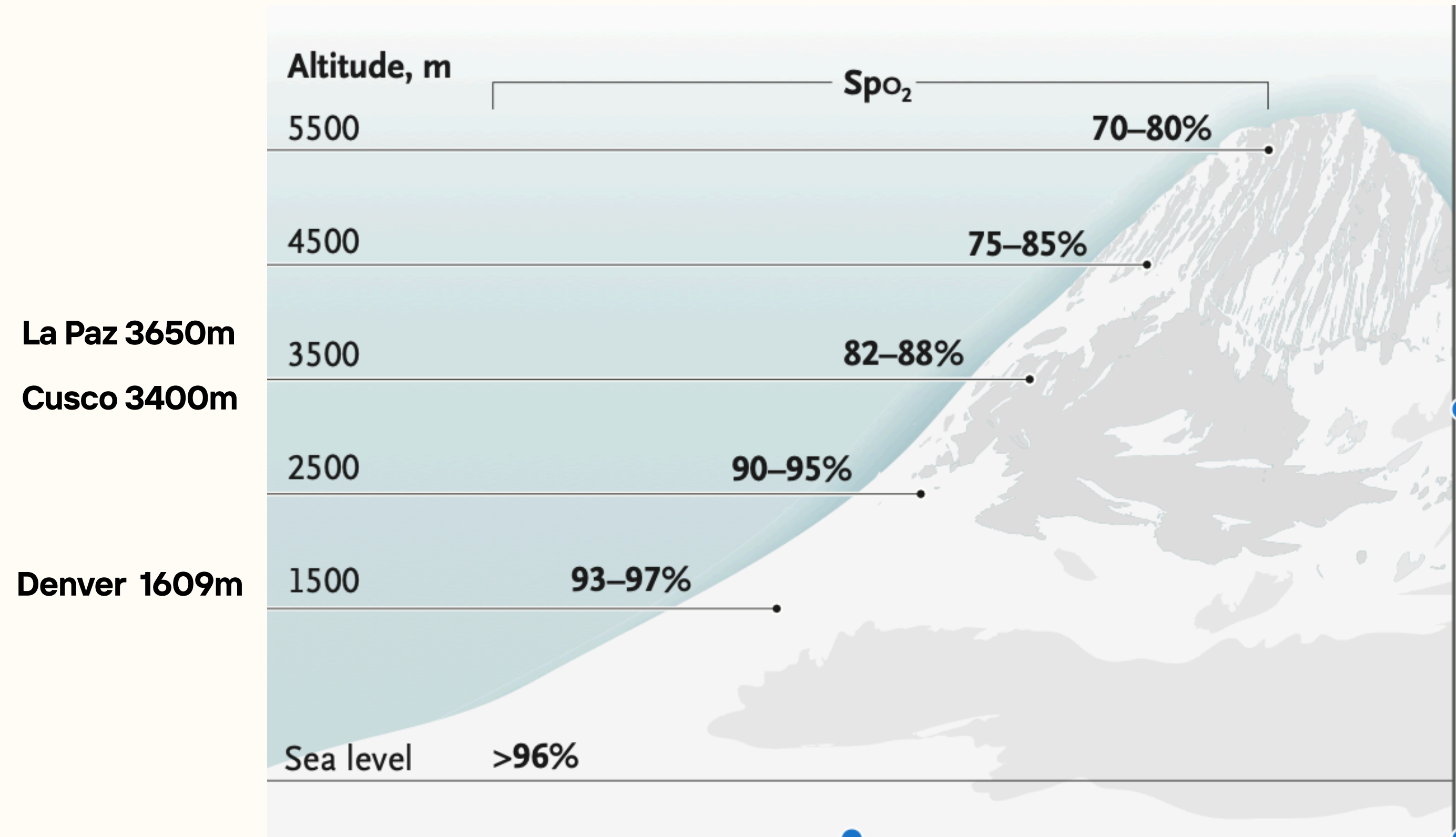
Physiologie de la Haute Altitude



Physiologie de la Haute Altitude



Saturation O2 selon altitude



Luks et Hackett. N Engl J Med 2022;386:364-73.



Pathophysiologie





Mal Aigu des Montagnes

Mal Aigu des Montagnes

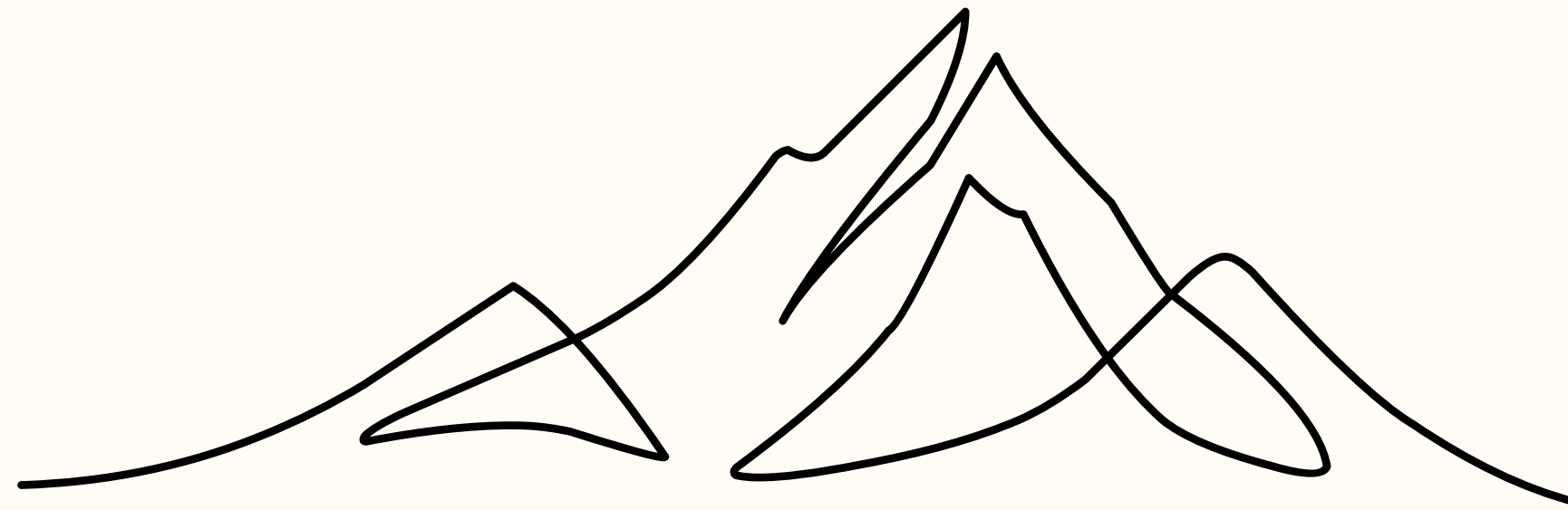
Signes et Symptômes du MAM

Céphalée + **Fatigue**
Nausée/vomissements
Vertiges
Lassitude



Mal Aigu des Montagnes

Stratégies pour prévenir le MAM



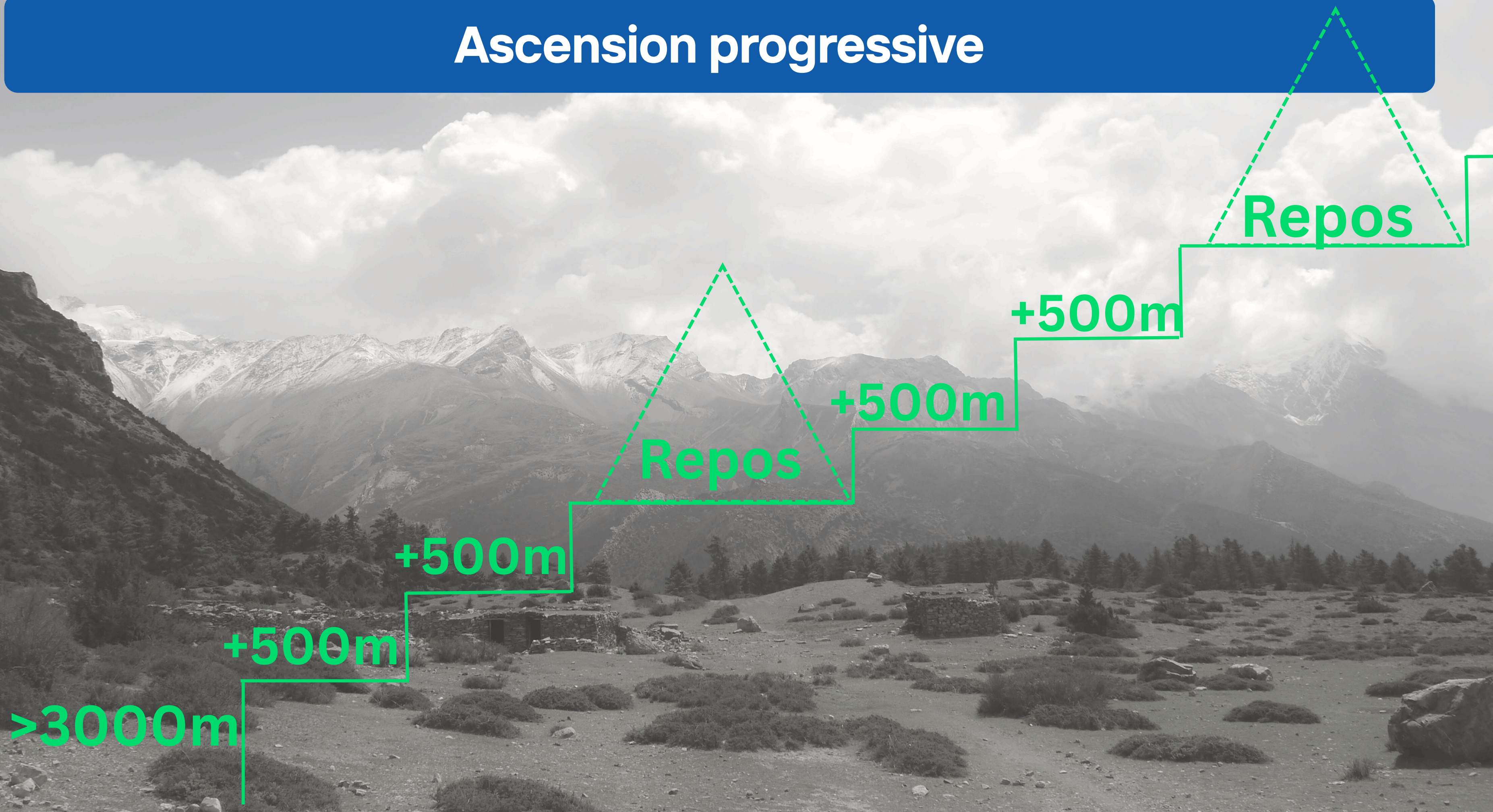
Ascension progressive

Acetazolamide

Dexamethasone

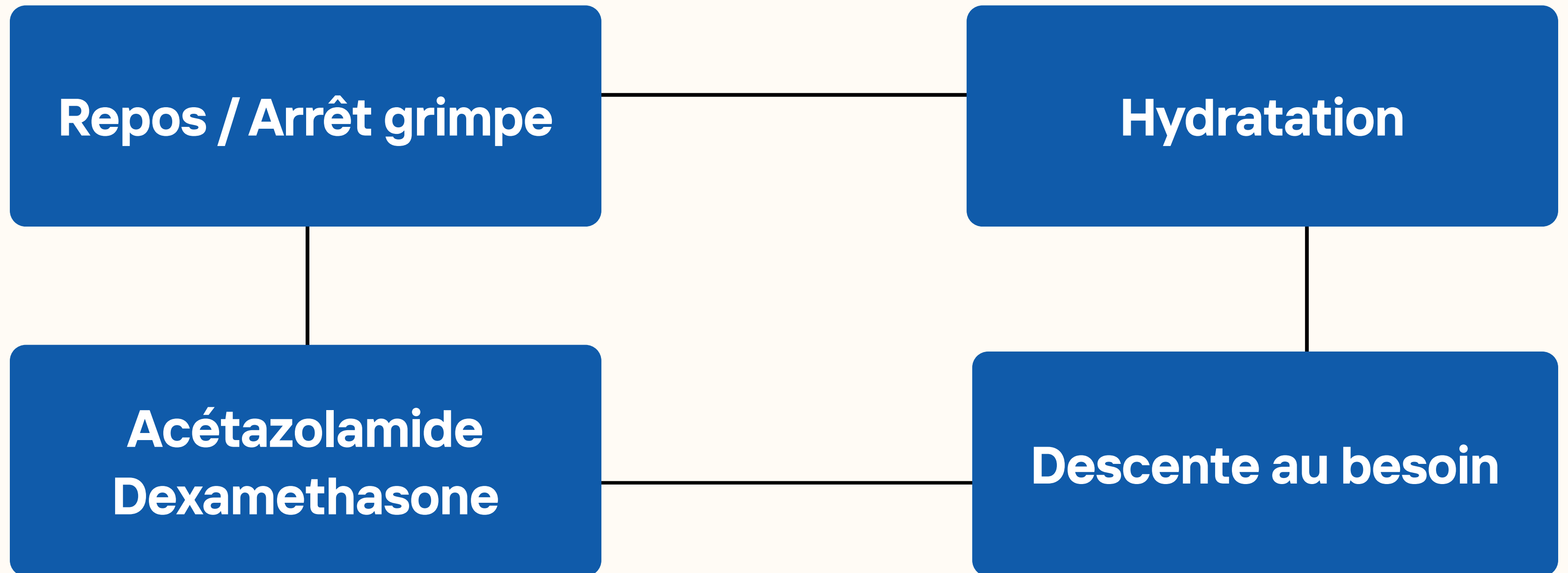
Hydratation

Ascension progressive



Mal Aigu des Montagnes

Traitement du mal aigu des montagnes



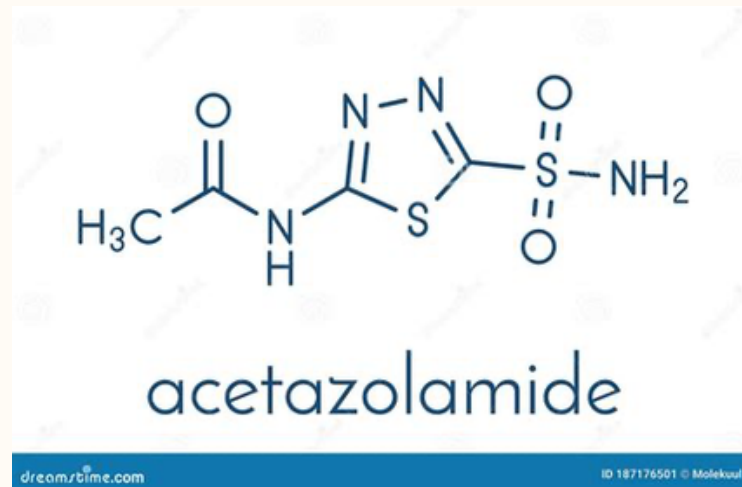
Mal Aigu des Montagnes

Traitement du mal aigu des montagnes



Mal Aigu des Montagnes

Acétazolamide



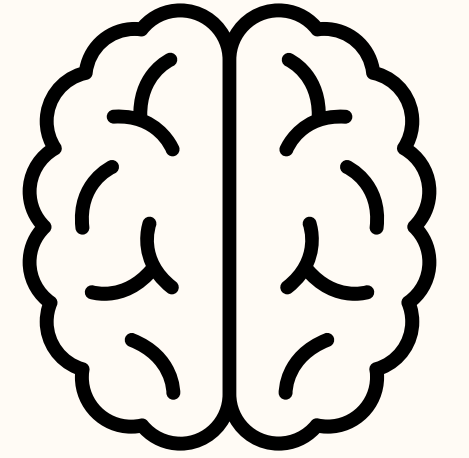
Inhibiteur de l'anhydrase carbonique

**Prévention : 125 mg po bid
Traitement : 250mg po bid**

**Continuer 2-3 jours ad altitude maximale
ou lors descente**

Pollakiurie, paresthésies, dysgeusie

Œdème Cérébral de Haute Altitude

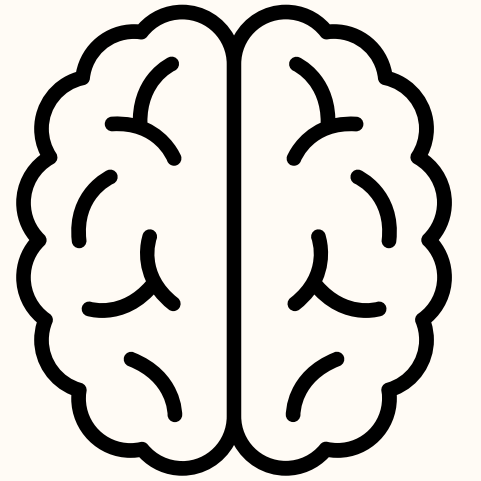


HACE



Œdème Cérébral HACE

Signes et symptômes



Ataxie

Confusion

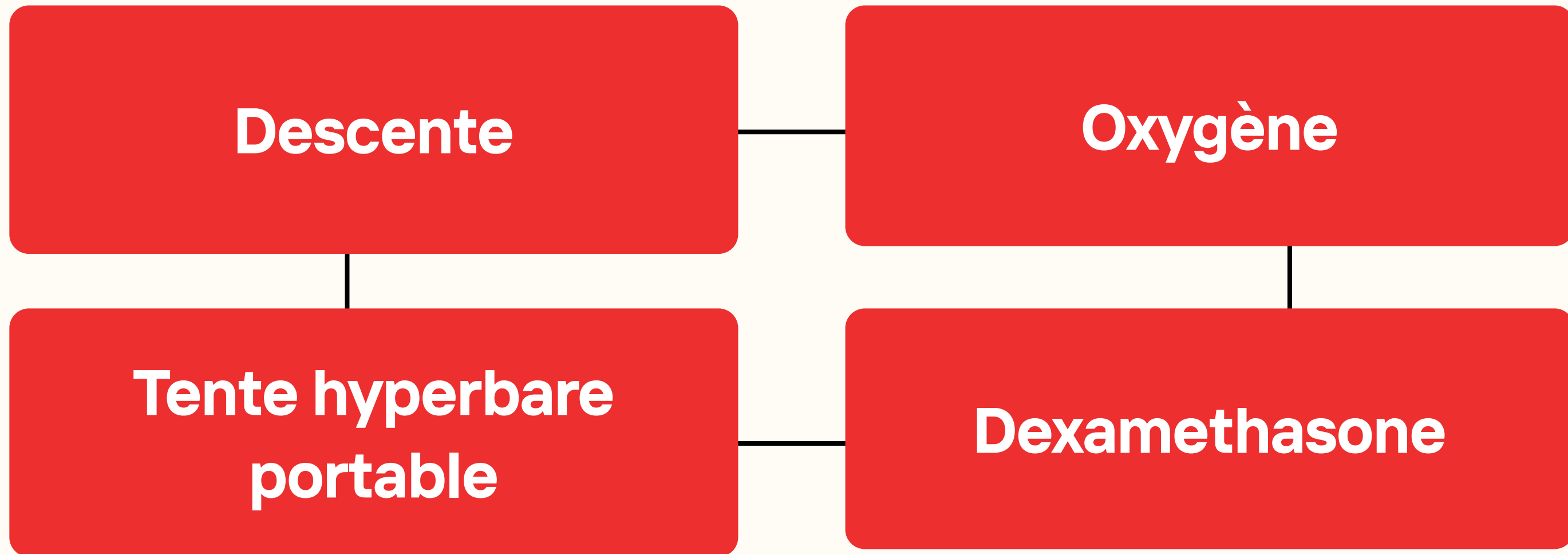
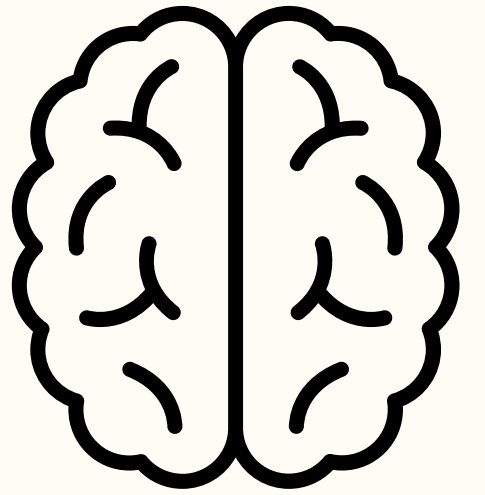
AÉC / Coma

DxD :
Hypoglycémie
HypoNa
Infection
AVC



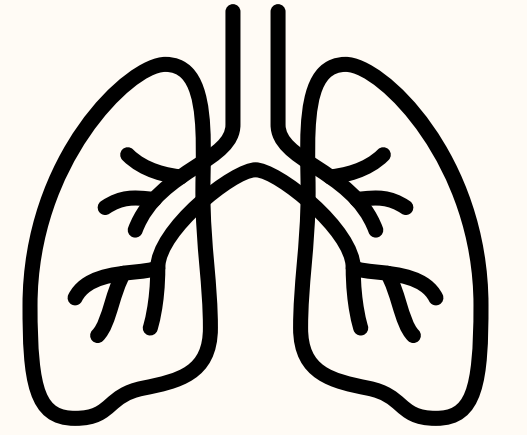
Œdème Cérébral

Traitement





Œdème Pulmonaire de Haute altitude

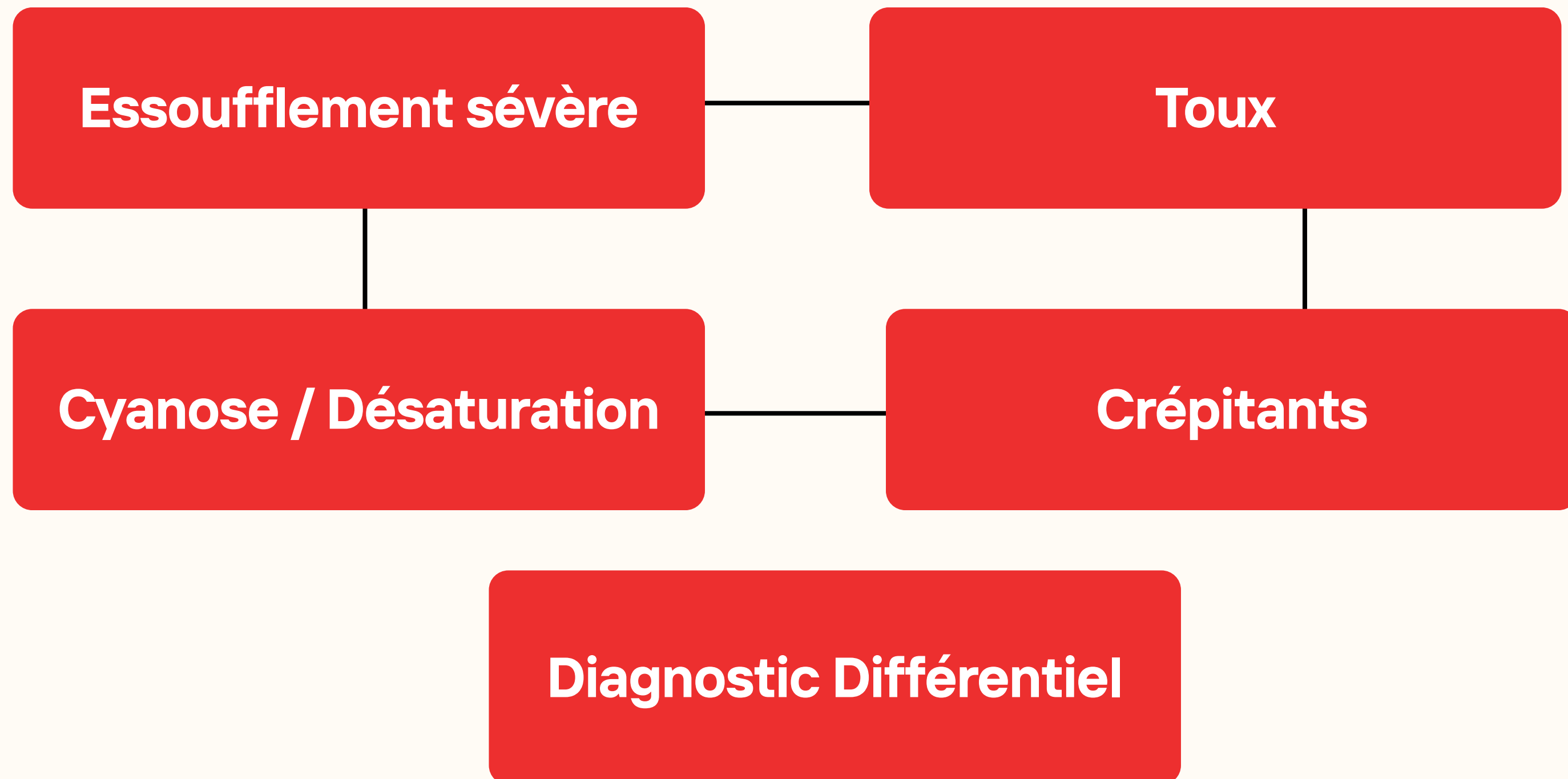
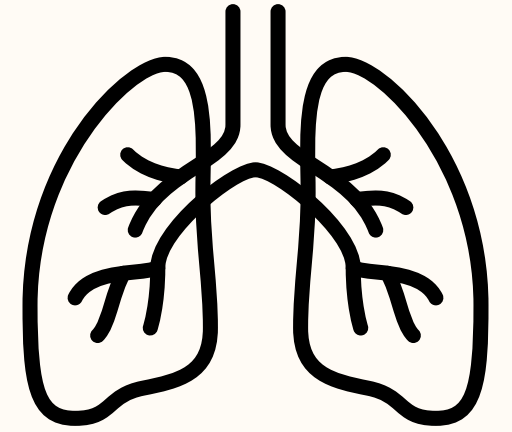


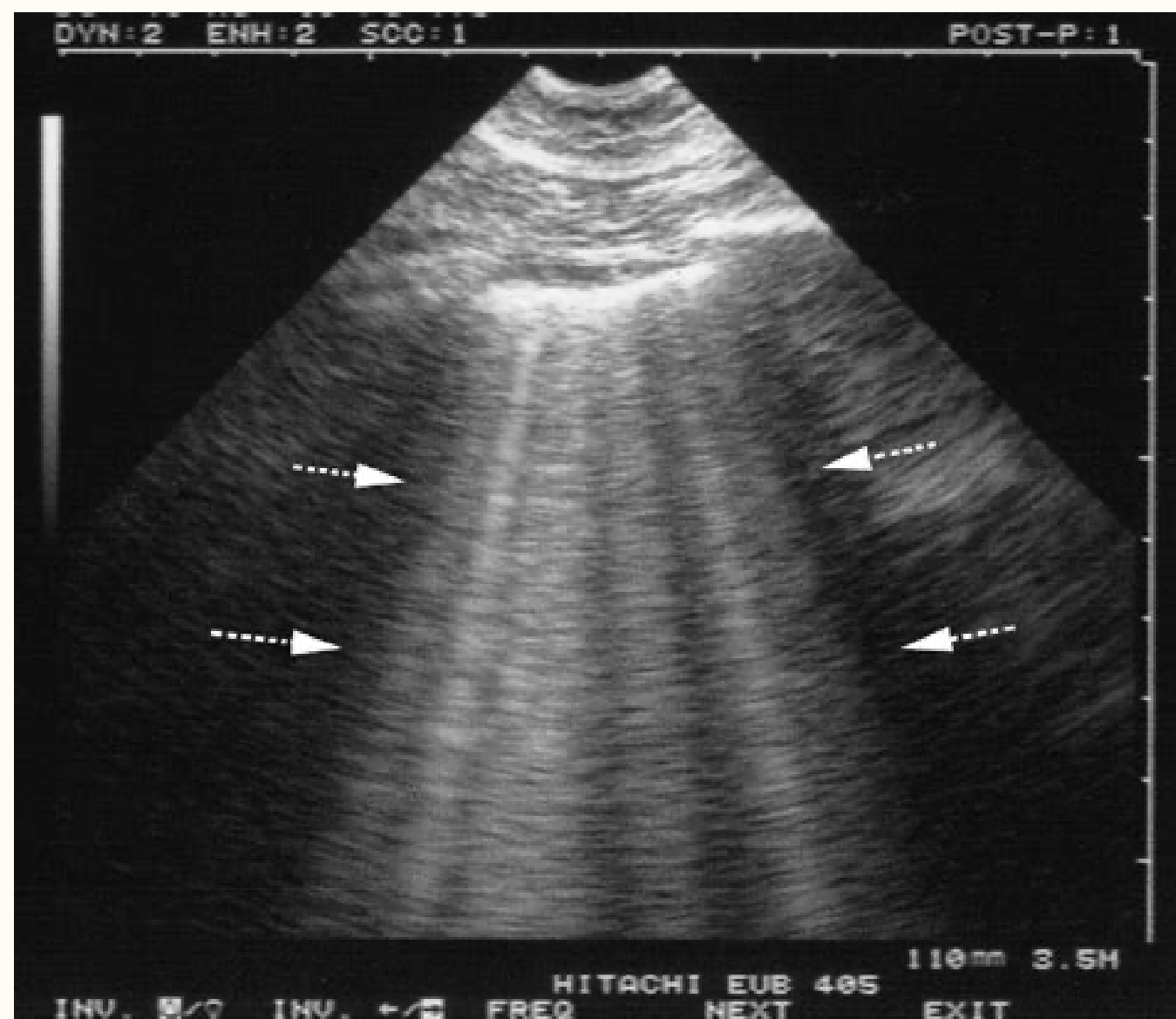
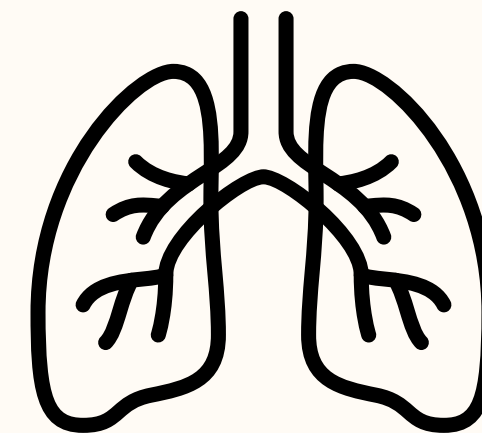
HAPE



Œdème Pulmonaire

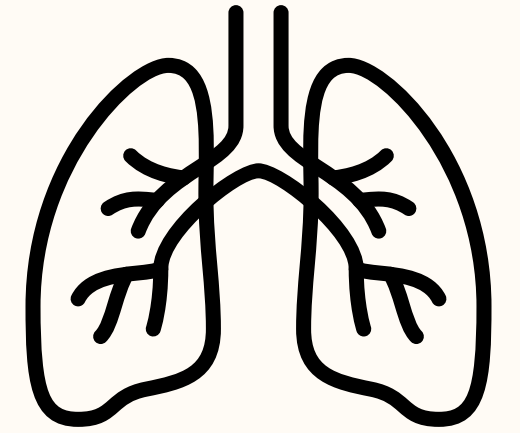
Signes et Symptômes de HAPE





Œdème pulmonaire

Stratégies de traitement pour HAPE



Descente

Oxygène

**Tente hyperbare
portable**

Nifedipine

Sildenafil





Chambre
hyperbare
portable

“Gamow bag”

Épidémiologie

15-30 %

Incidence du MAM

2-5 %

Incidence HAPE

1 %

Incidence HACE

Rogich et al. - WEM 2023

Hall et al. BMJ Military Health 2013

Jensen et al. High Altitude Cerebral Edema. StatPearls 2025

Deaths on Everest

How did they happen?

Ascending in
summit bid **20**

Descending from
summit bid **90**

Expedition
evacuation **11**

Route
preparation **120**

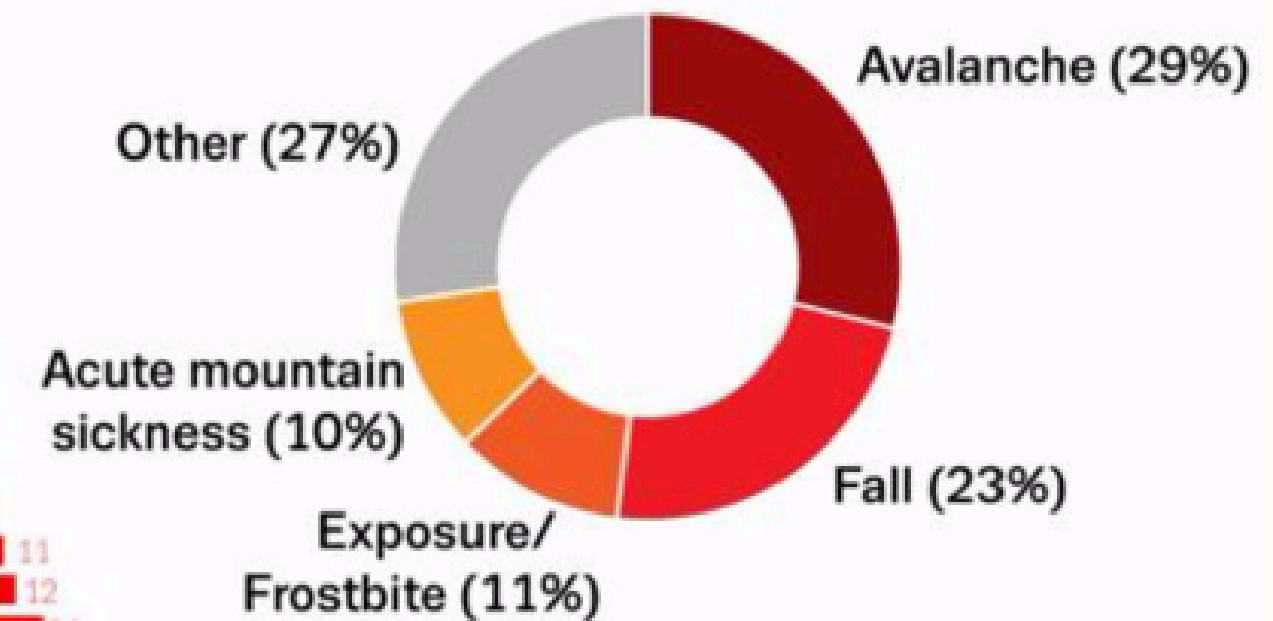
At Base Camp **36**

Enroute to
Base Camp **6**

Where did they come from?

Bangladesh	1
Belgium	1
Brazil	1
Chile	1
Denmark	1
Finland	1
Ireland	1
Slovenia	1
Sweden	1
Ukraine	1
West Germany	1
Austria	2
Czech Republic	2
Hungary	2
Switzerland	2
Taiwan	2
Yugoslavia	2
Bulgaria	3
Italy	3
New Zealand	3
Canada	4
Czechoslovakia	5
Spain	5
France	6
Australia	6
Germany	7
Poland	7
Russia	8
South Korea	11
China	12
USA	14
India	17
UK	17
Japan	19
Nepal	169

Most common causes of death?



© nigel hawtin

Source: Richard Salisbury and Elizabeth Hawley, Himalaya Database (Credit: Nigel Hawtin)

**Plus haut,
plus vite?**





British soldiers make Everest history using new method

21 May 2025

Share Save

Navin Singh Khadka
Environment correspondent, BBC World Service



Xénon

Xenon

atomic number

54

symbol

Xe

electron configuration

[Kr]4d¹⁰5s²5p⁶

name

xenon

atomic weight

131.293

acid-base properties of higher-valence oxides

crystal structure

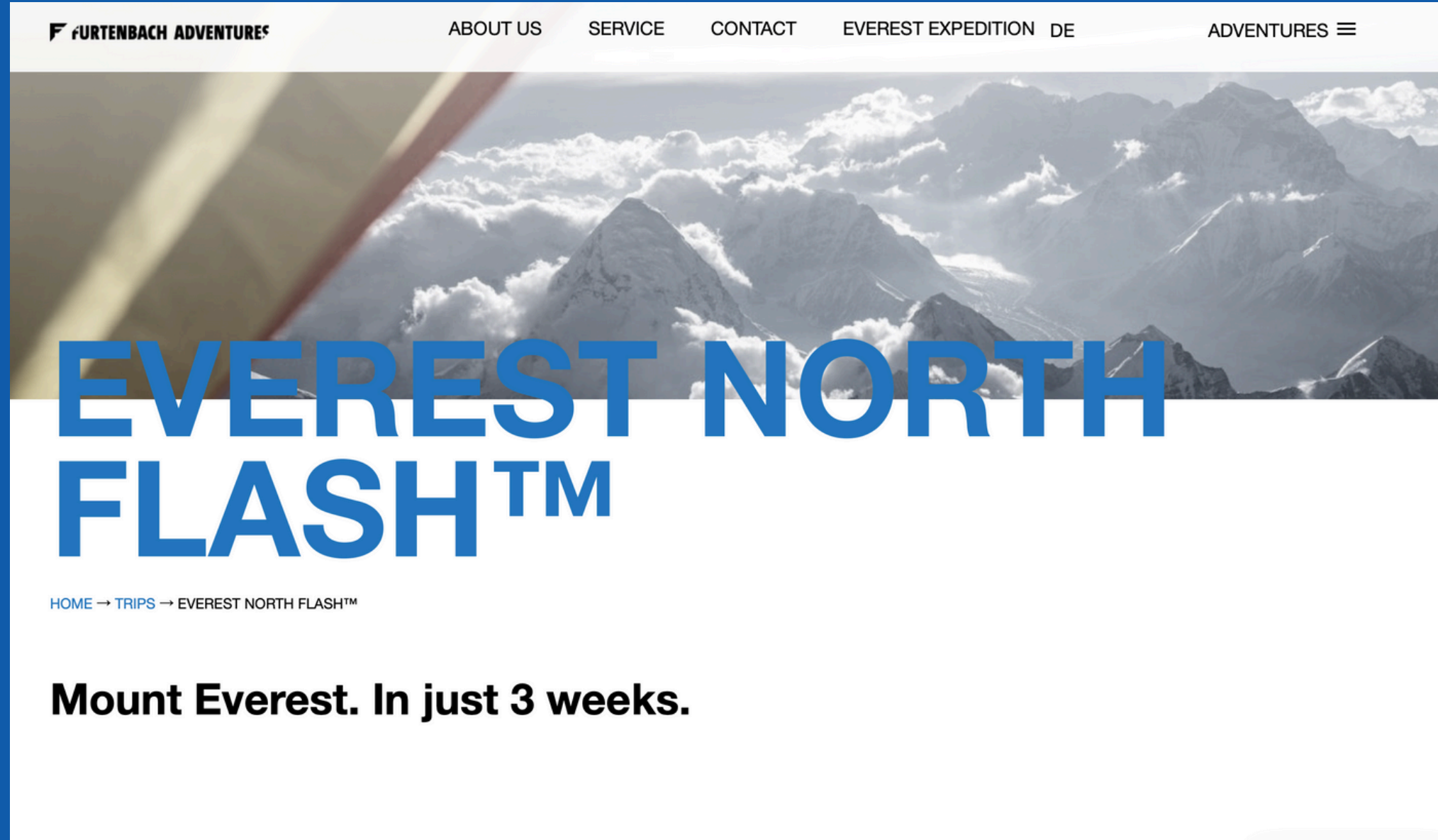
physical state at 20 °C (68 °F)

Noble gases	Gas
Face-centred cubic	Weakly acidic



Tente Hypoxique Normobare

Ascension Rapide / Flash



The screenshot shows the website for Furtenbach Adventures. The header includes the logo 'FURTENBACH ADVENTURES' and navigation links: 'ABOUT US', 'SERVICE', 'CONTACT', 'EVEREST EXPEDITION DE', and 'ADVENTURES' with a menu icon. The main visual is a large image of Mount Everest with the text 'EVEREST NORTH FLASH™' overlaid in large blue letters. Below the image, a breadcrumb trail reads 'HOME → TRIPS → EVEREST NORTH FLASH™'. The main headline states 'Mount Everest. In just 3 weeks.'

FURTENBACH ADVENTURES

[ABOUT US](#) [SERVICE](#) [CONTACT](#) [EVEREST EXPEDITION DE](#) [ADVENTURES](#) ≡

EVEREST NORTH FLASH™

[HOME](#) → [TRIPS](#) → [EVEREST NORTH FLASH™](#)

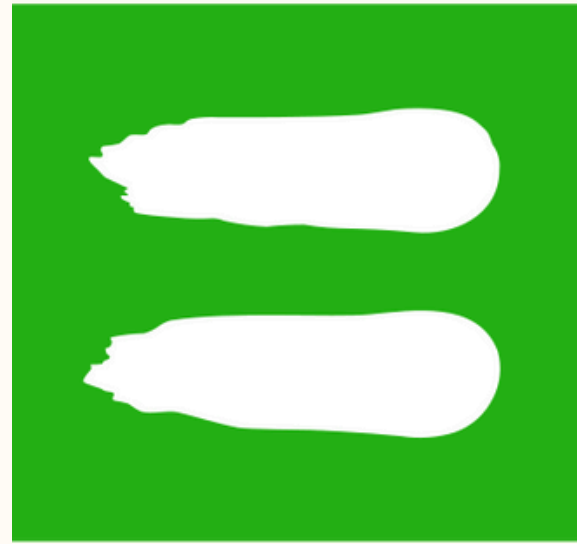
Mount Everest. In just 3 weeks.



Athlètes en altitude

Acclimatation pré-compétition





**world
anti-doping
agency**

BANNIES

ACETAZOLAMIDE
DEXAMETHASONE
XENON

NON-BANNIES

NIFEDIPINE
SILDENAFIL
TADALAFIL

Messages Clés

Ascension progressive = clé

Il n'y a pas beaucoup de raccourcis en altitude

Garder le Viagra et le Cialis pour la couchette



Courriel

eric.cont@gmail.com

Blog

Frozendoc.com

