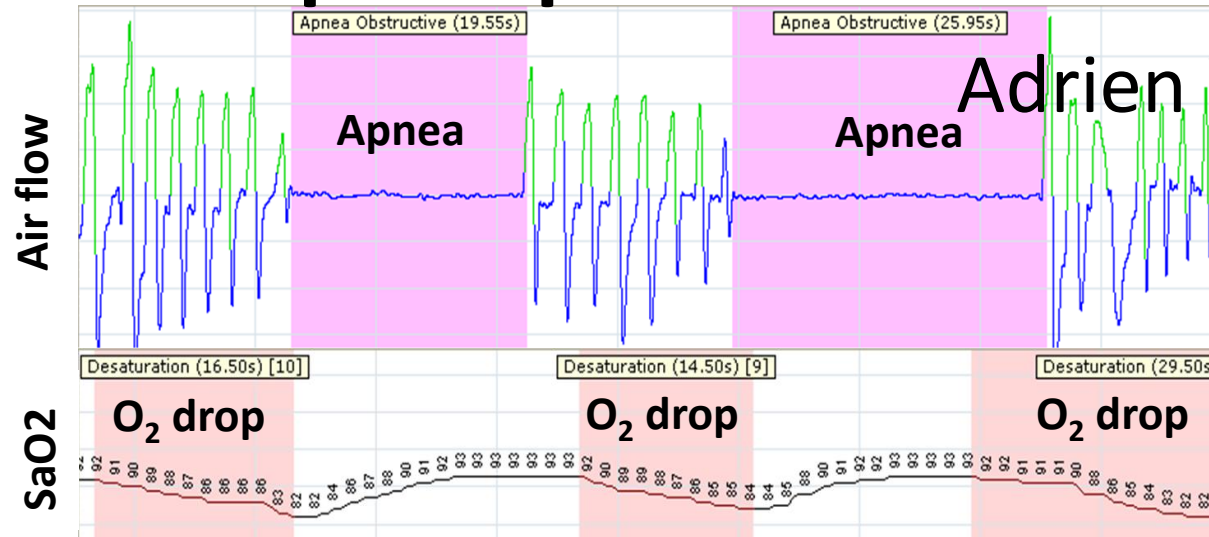


Physio-pathological determinants of pulse wave variations in apneic patients: a crossover interventional study

Adrien Waeber

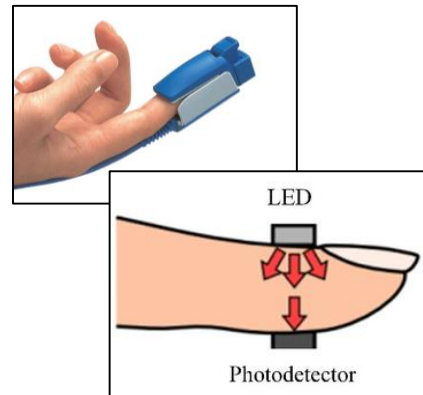
- Affects up to **49% of men** and **23% of women** > 40 y.o
- Associated with **sleepiness** and **increased long-term cardiovascular risk**



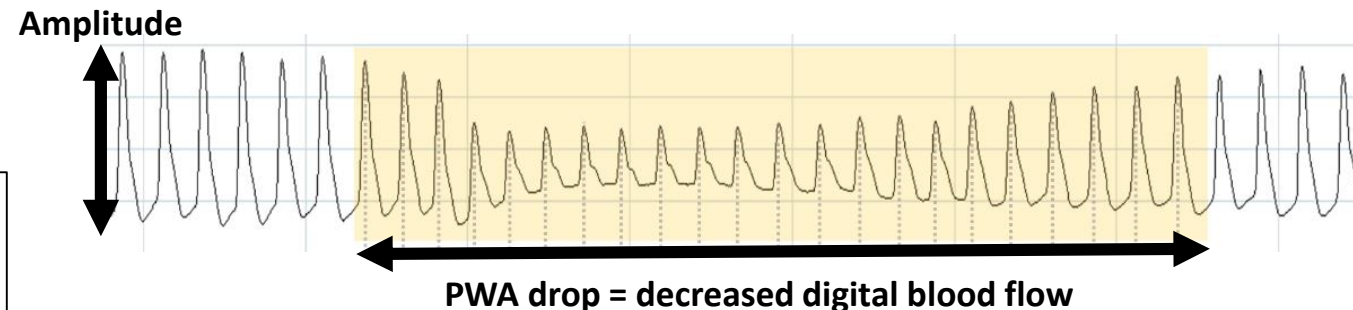
OSA Patients

Who should we treat?

Pulse Oximeter
Signal Analysis



Pulse Wave Amplitude (PWA)

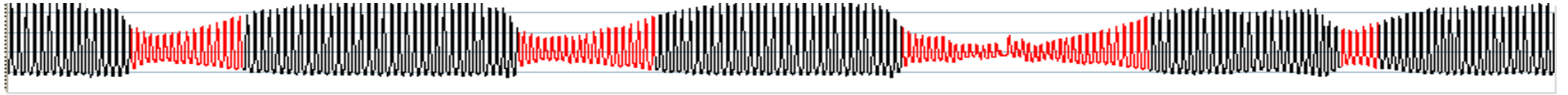


Higher CV risk?

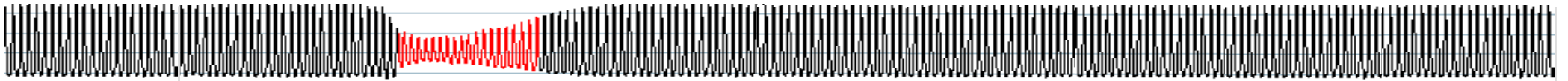
Prospective Observational Study

~ 2000 OSA patients, 10 years follow-up

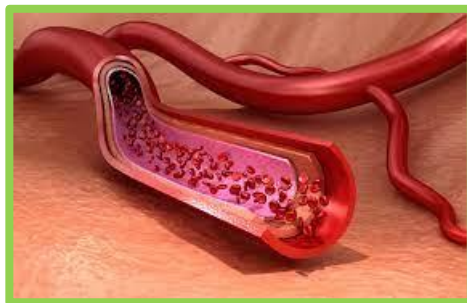
Physiologic PWA variations



Reduced PWA variations = Loss of physiological variability → Higher CV risk

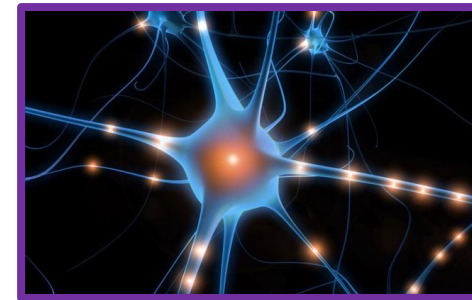


What physio-pathological mechanisms determine the variation of nocturnal pulse wave amplitude in apneic patients?



Vascular Dysfunction

Hypothesis?



Autonomic Nervous System Dysfunction

What physio-pathological mechanisms determine the variation of nocturnal pulse wave amplitude in apneic patients?



45 OSA patients
High variation of PWA



45 OSA patients
Low variation of PWA

FIRST VASCULAR + AUTONOMIC FUNCTION TESTS

CPAP

Placebo

CPAP

Placebo

SECOND VASCULAR + AUTONOMIC FUNCTION TESTS

Placebo

CPAP

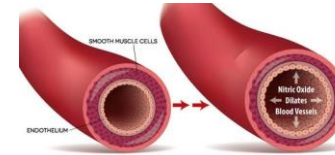
Placebo

CPAP

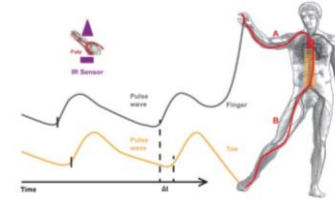
THIRD VASCULAR + AUTONOMIC FUNCTION TESTS

Vascular function?

Flow Mediated Vasodilation



Arterial Stiffness



Autonomic function?

Baroreflex Sensitivity Assessment



Cold Pressor Test



2023

2024-2025

