Modifications Structurelles et Fonctionnelles de la Circulation Coronaire Dans l'Hypertension Artérielle

Alain Nitenberg

Service de Physiologie et d'Explorations Fonctionnelles CHU Jean Verdier Bondy

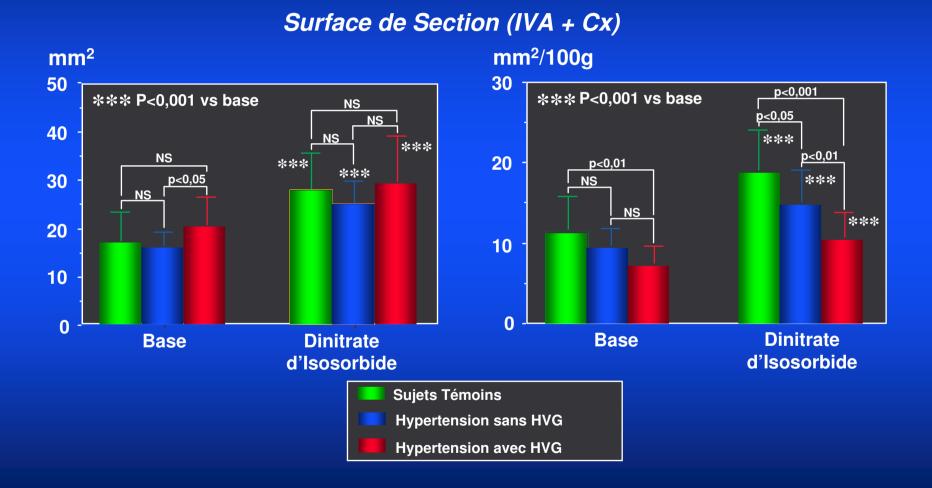
Poitiers 2009

Anomalies
Structurelles
et/ou
Fonctionnelles

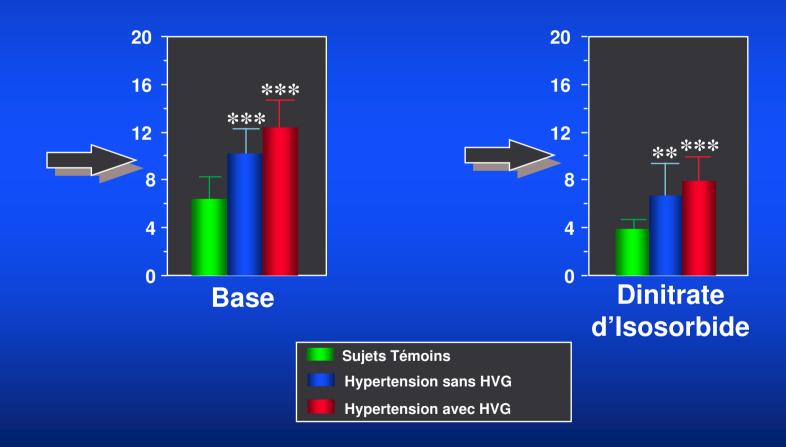
- 1-Artères Coronaires Épicardiques
- 2-Petites Artères et Artérioles
- 3-Capillaires

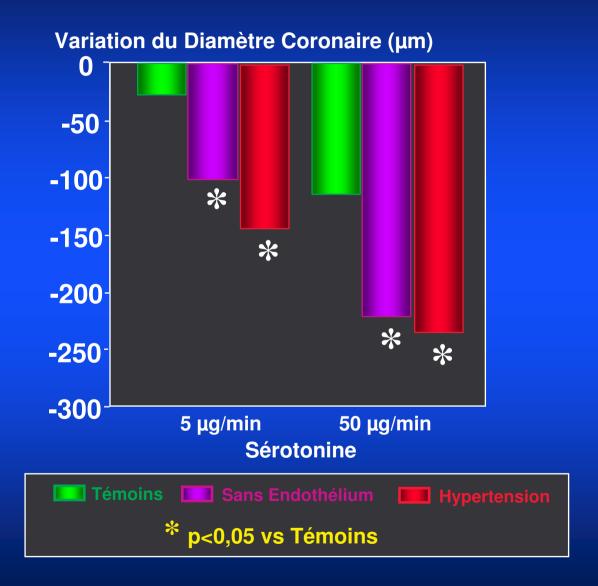
Anomalies
Structurelles
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Fonctionnelles

1-Artères Coronaires Épicardiques

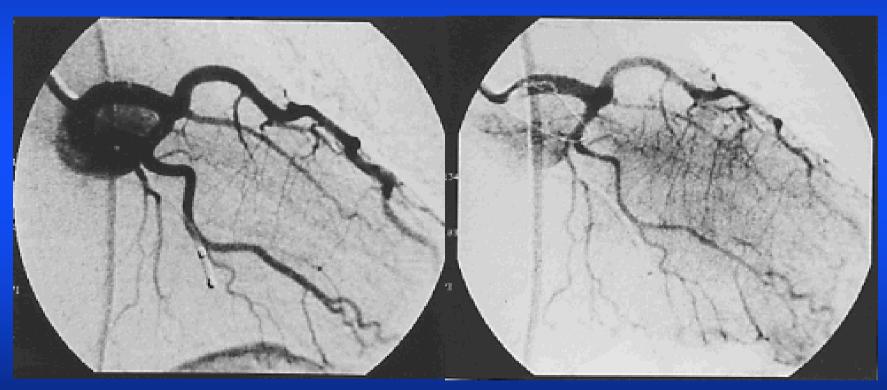


Vitesse d'Écoulement Intracoronaire (cm/sec)





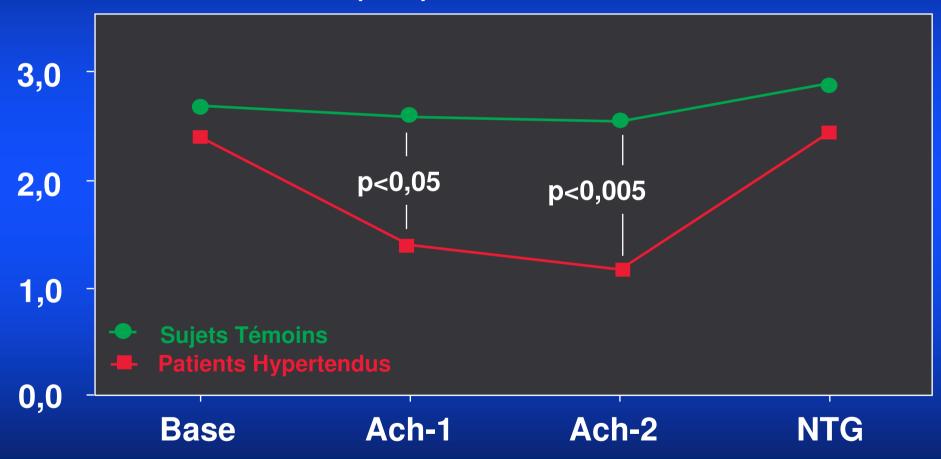
Hypertension Artérielle Essentielle



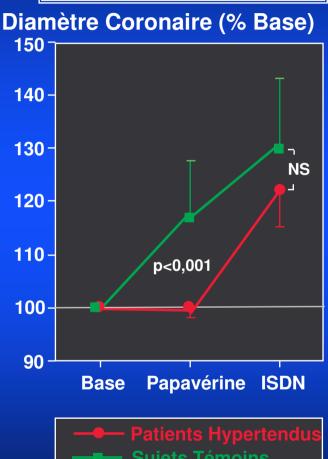
Base

Acétylcholine

Diamètre Coronaire (mm)

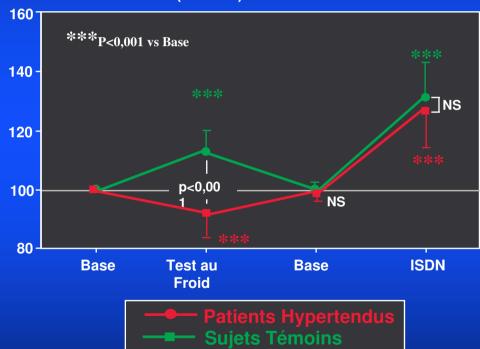


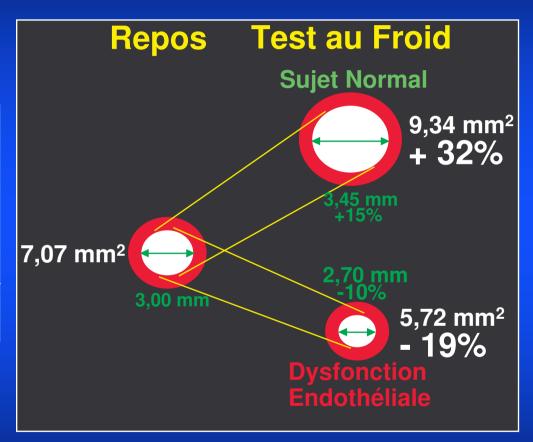
Flux-Dépendance



Test au Froid



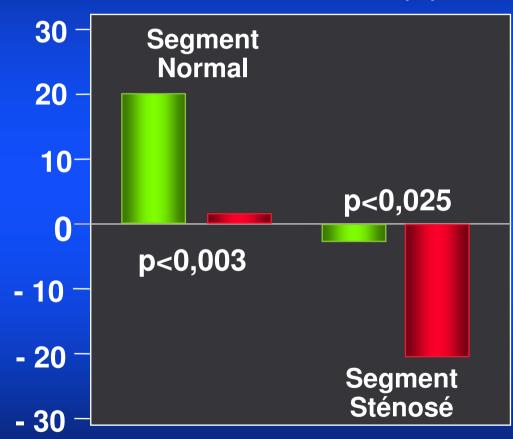




Normotendus

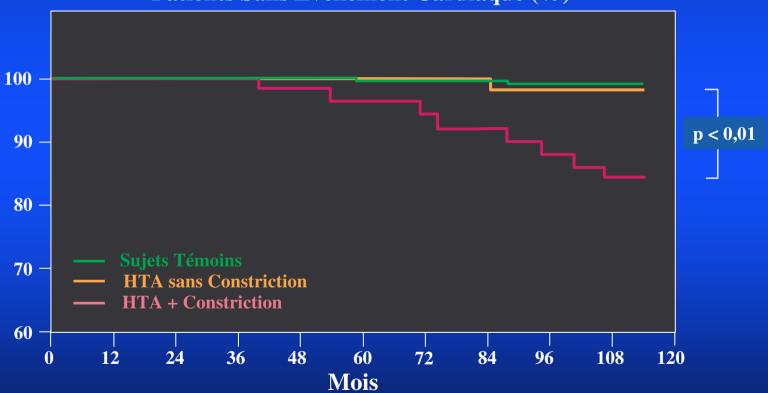
Hypertendus

∆ Surface de Section à l'Exercice (%)

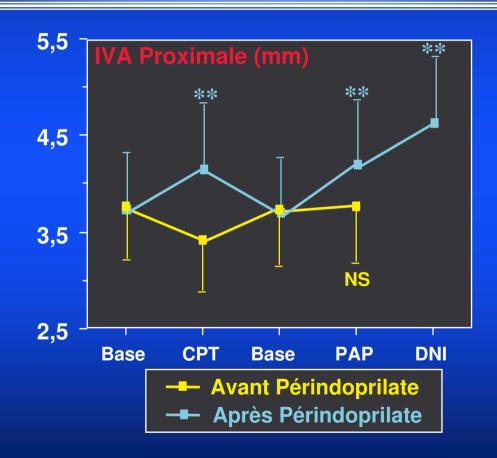


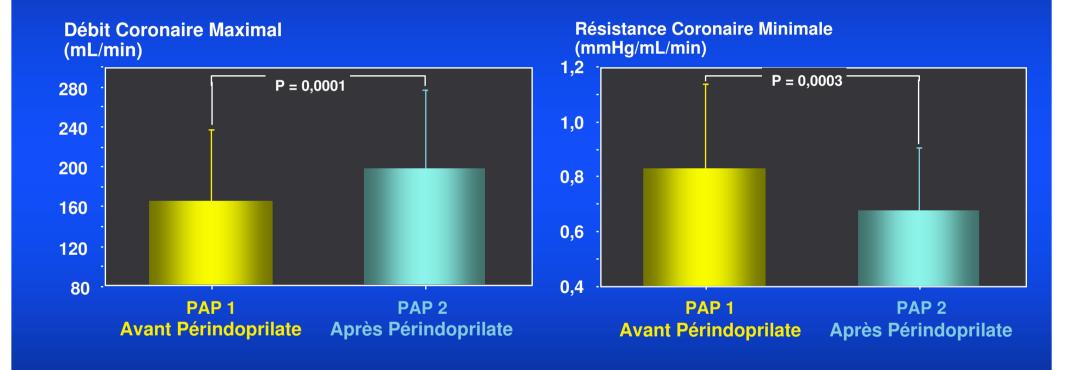
Valeur Prédictive de la Dysfonction Endothéliale Coronaire (Test au Froid)





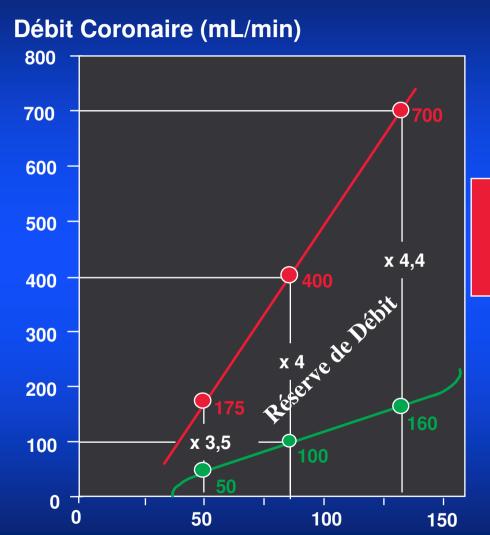
Effets de l'Inhibition de l'Enzyme de Conversion





Anomalies
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Fonctionnelles

- 1-Artères Coronaires Épicardiques
- 2-Petites Artères et Artérioles

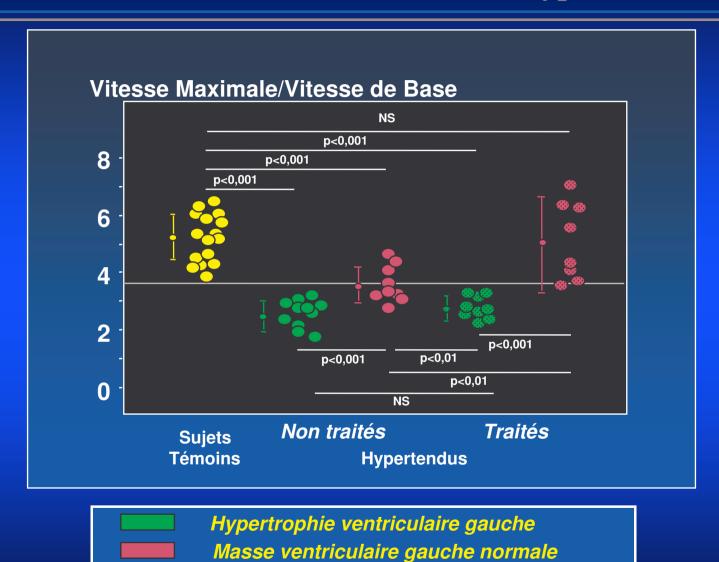


Débit Coronaire Maximal

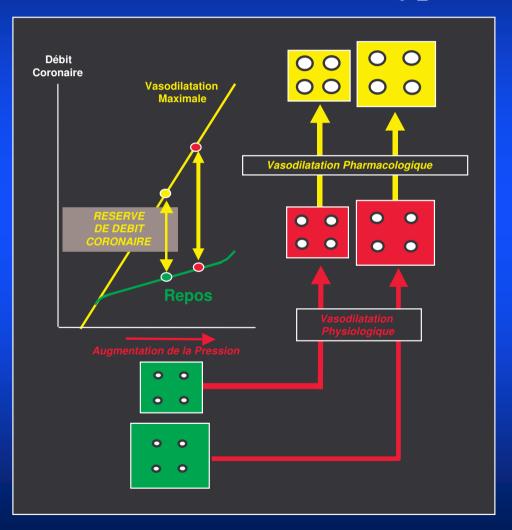
Dipyridamole
Papavérine
Adénosine
Hyperémie Post-Occlusive

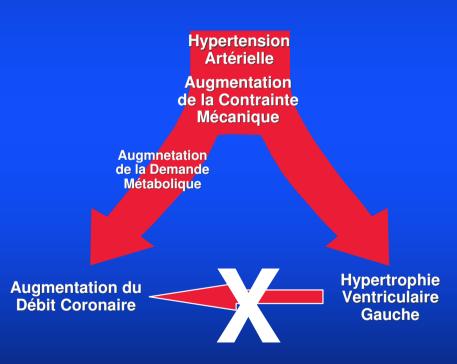
Débit Coronaire Basal

Pression Coronaire Moyenne (mmHg)



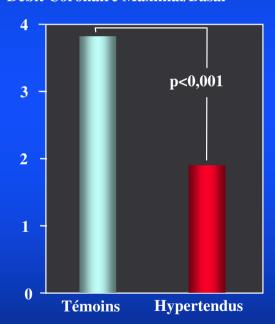
Réserve Coronaire et Hypertrophie Ventriculaire Gauche



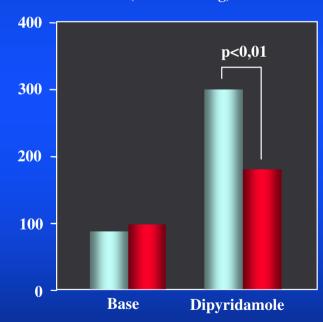


Hypertension Artérielle et Réserve de Débit Coronaire (Dipyridamole)

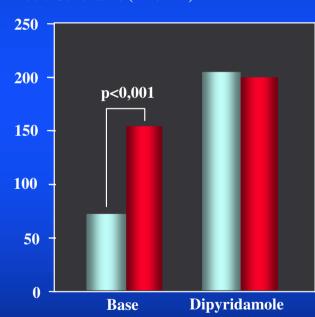




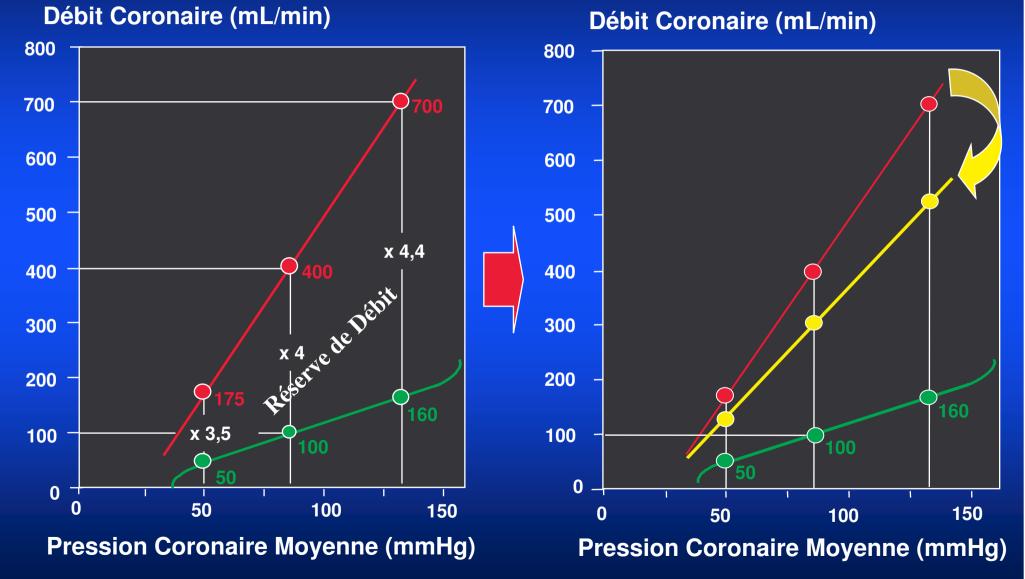
Débit Coronaire (mL/min/100g)

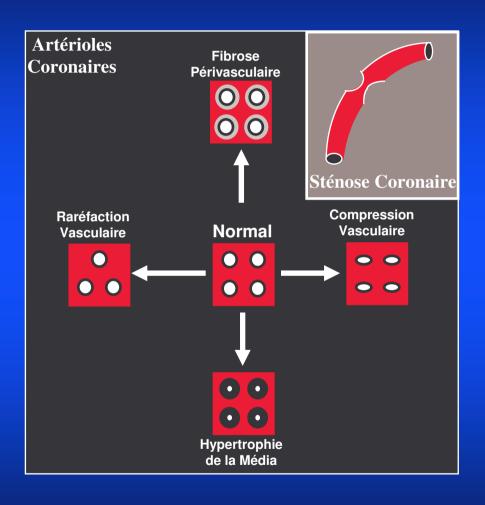


Débit Coronaire (mL/min)



Diminution de la Surface de Section Maximale des Vaisseaux Coronaires





Raréfaction Artériolo-Capillaire Coronaire



Normal

Hypertension Artérielle

Biopsies Endomyocardiques



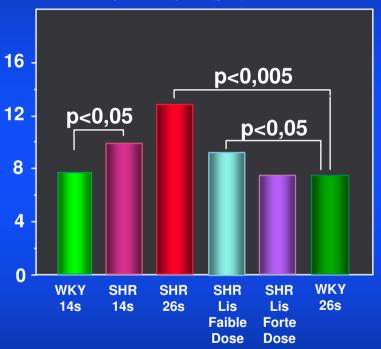
Sujet Normal



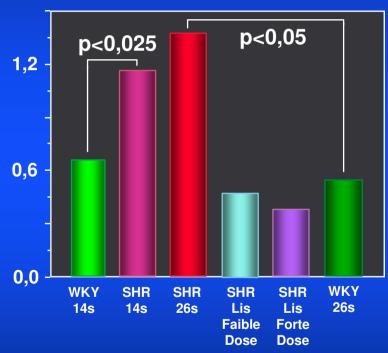
Hypertension Artérielle

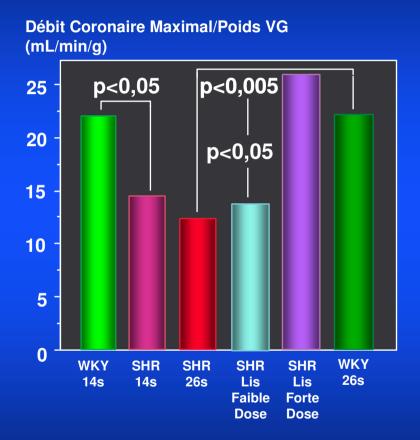
Schwartzkopff et coll. Circulation 1993; 88: 993-1003.

Épaisseur de la Média des Artères Intramyocardiques (µm)

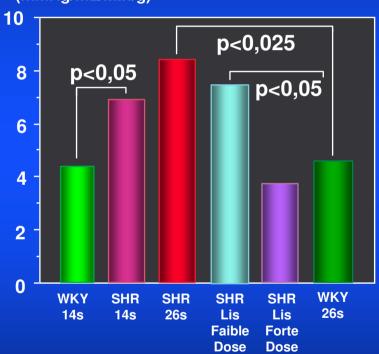


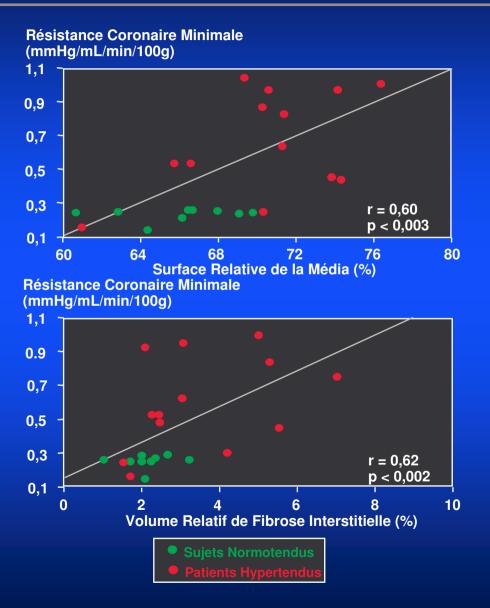
Fibrose Périvasculaire/Lumière

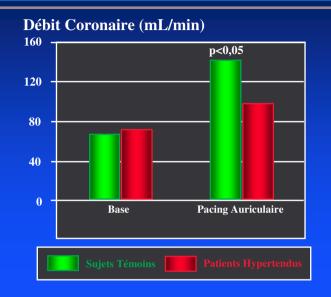




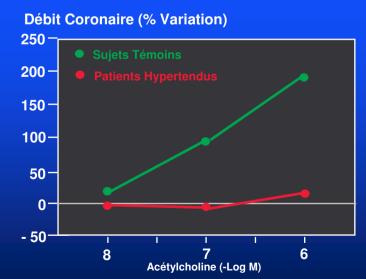




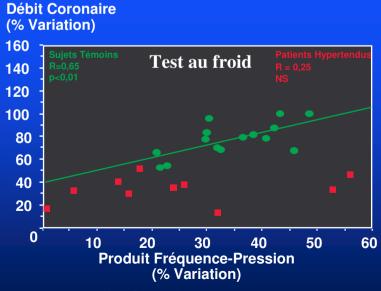




Brush et coll. N Engl J Med 1988; 319: 1302-1307.



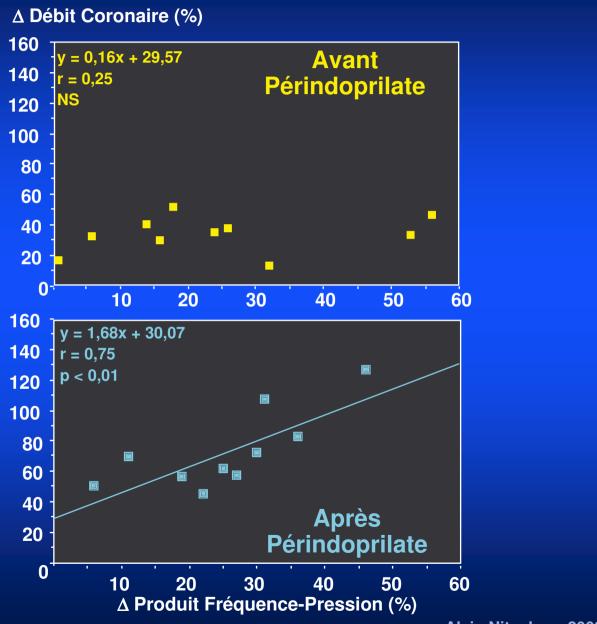
Treasure et coll. Circulation 1993; 87: 86-93.



Antony et coll. Circulation 1996; 94: 3115-3122.

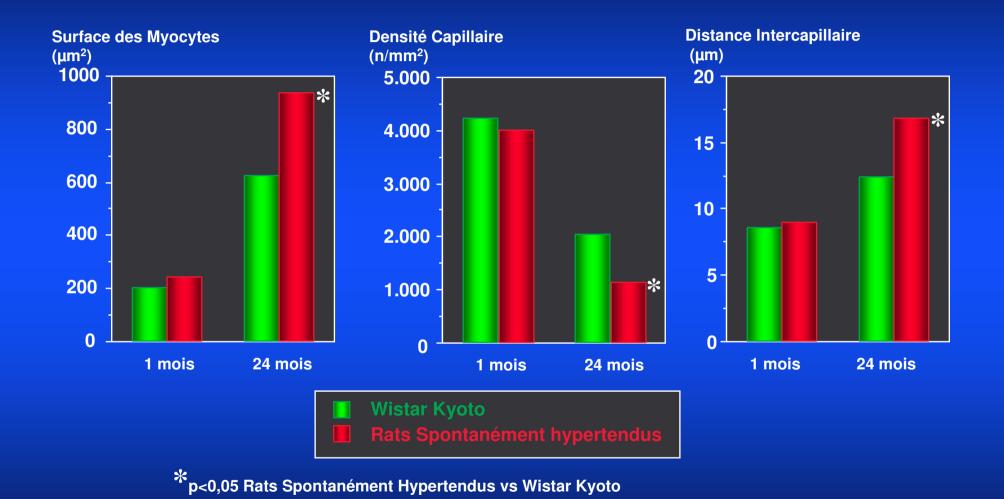
Alain Nitenberg 2009

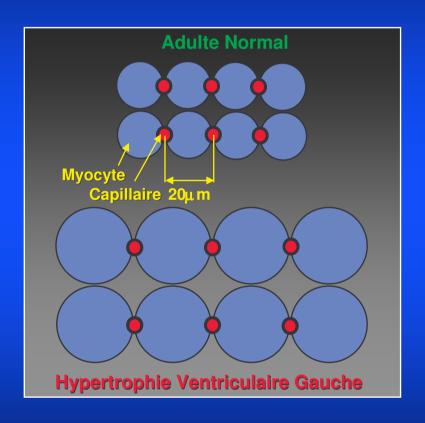
Test
au
Froid

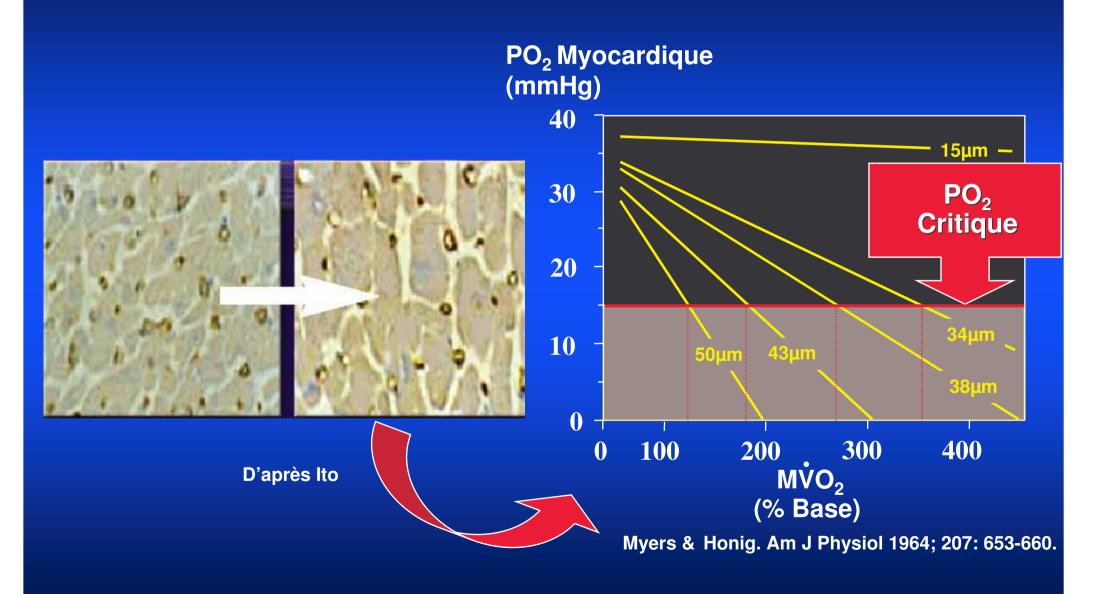


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Conclusions

Hypertension Artérielle

Hypertrophie et Remodelage Cardiaque
et Vasculaire
Fibrose Myocardique, Vasculaire
et Périasculaire

Dysfonction Endothéliale

 Déséquilibre Demande/Apport en Oxygène

Épisodes d'Ischémie
 Silencieuse

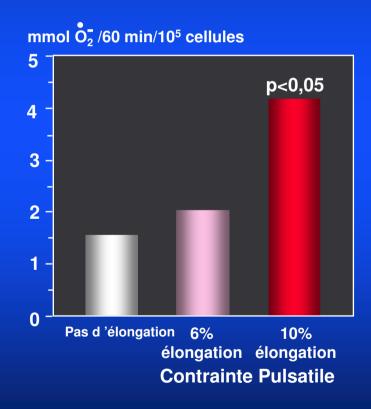
Insuffisance Ventriculaire Gauche Dysfonction &

Déterioration Myocardique

Athérome

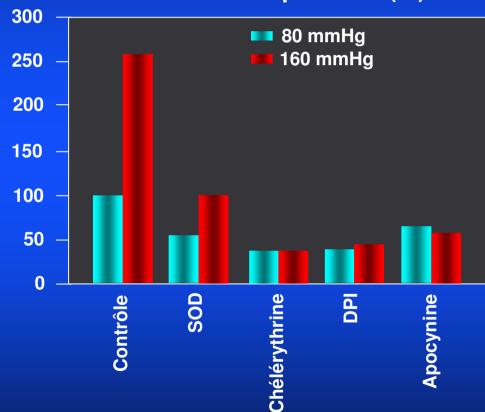
De l'Hypertension Artérielle à l'Athérosclérose Coronaire: Le Rôle Clé du Stress Oxydant

Contrainte Pulsatile et Production de Radicaux Superoxide (Cellules Musculaires Lisses Coronaires Humaines)



Pression, Anions Superoxyde, PKC C et NAD(P)H Oxydase (Rat)





Chélérythrine = inhibiteur de la PKC
DPI et Apocynine = inhibiteurs de la NAD(P)H oxydase

Ungvari et coll. Circulation 2003;108:1253-1258.

