

Électrophysiologie cardiaque pour l'anesthésiste

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Faculté de Médecine, Université de Montréal

MMD6500

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**INSTITUT DE
CARDIOLOGIE
DE MONTRÉAL**

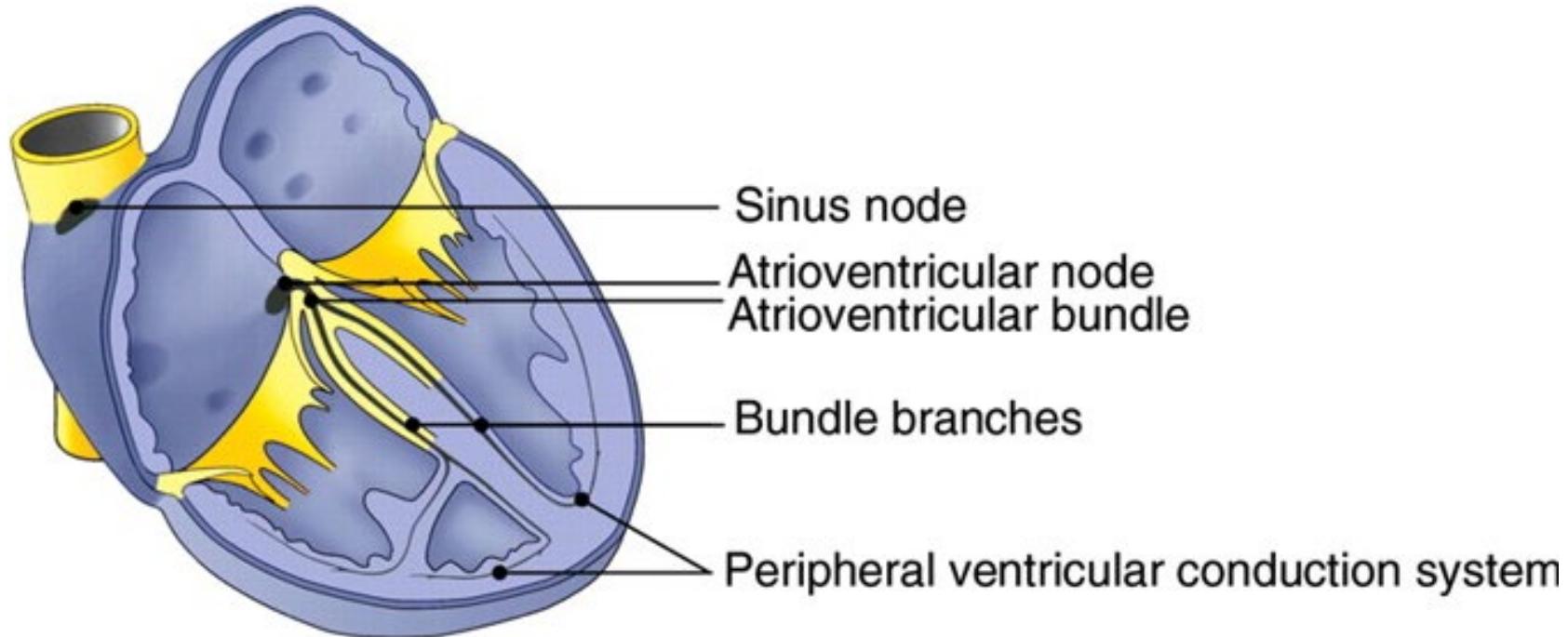
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Objectifs

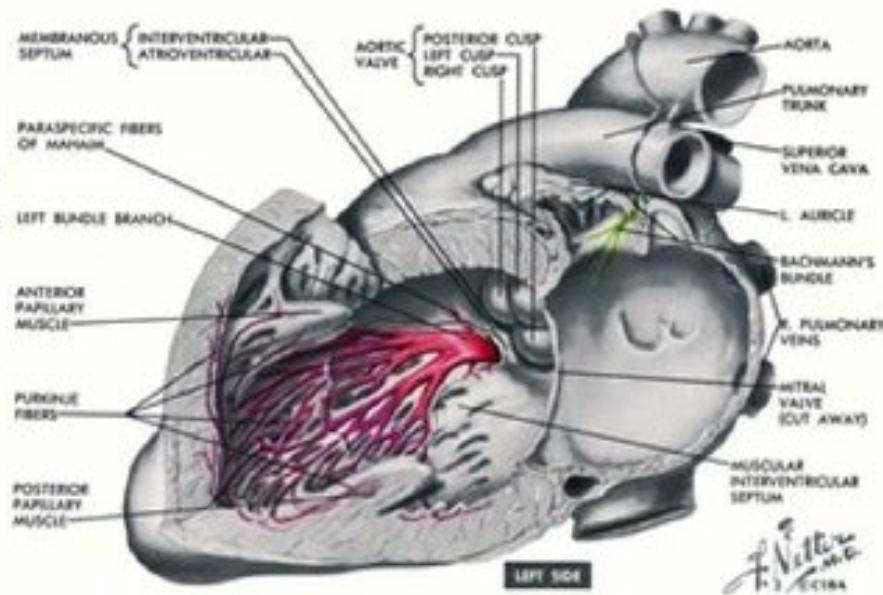
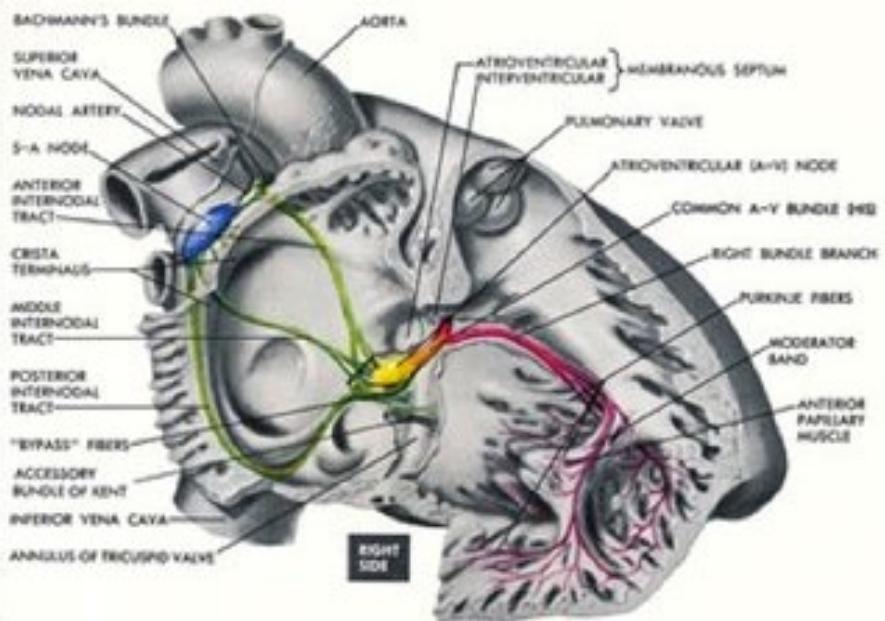
- Describe the normal **anatomy of the cardiac conduction system**
- Describe the phases of **cellular action potentials**, including the major associated ion currents
- Describe the **automaticity** of the cardiac conduction system, understanding the differences between the SA node, AV node, Bundle of His and Purkinje fibres
- Describe **excitation-contraction coupling**, and how electrical activation of the myocyte leads to contraction and relaxation



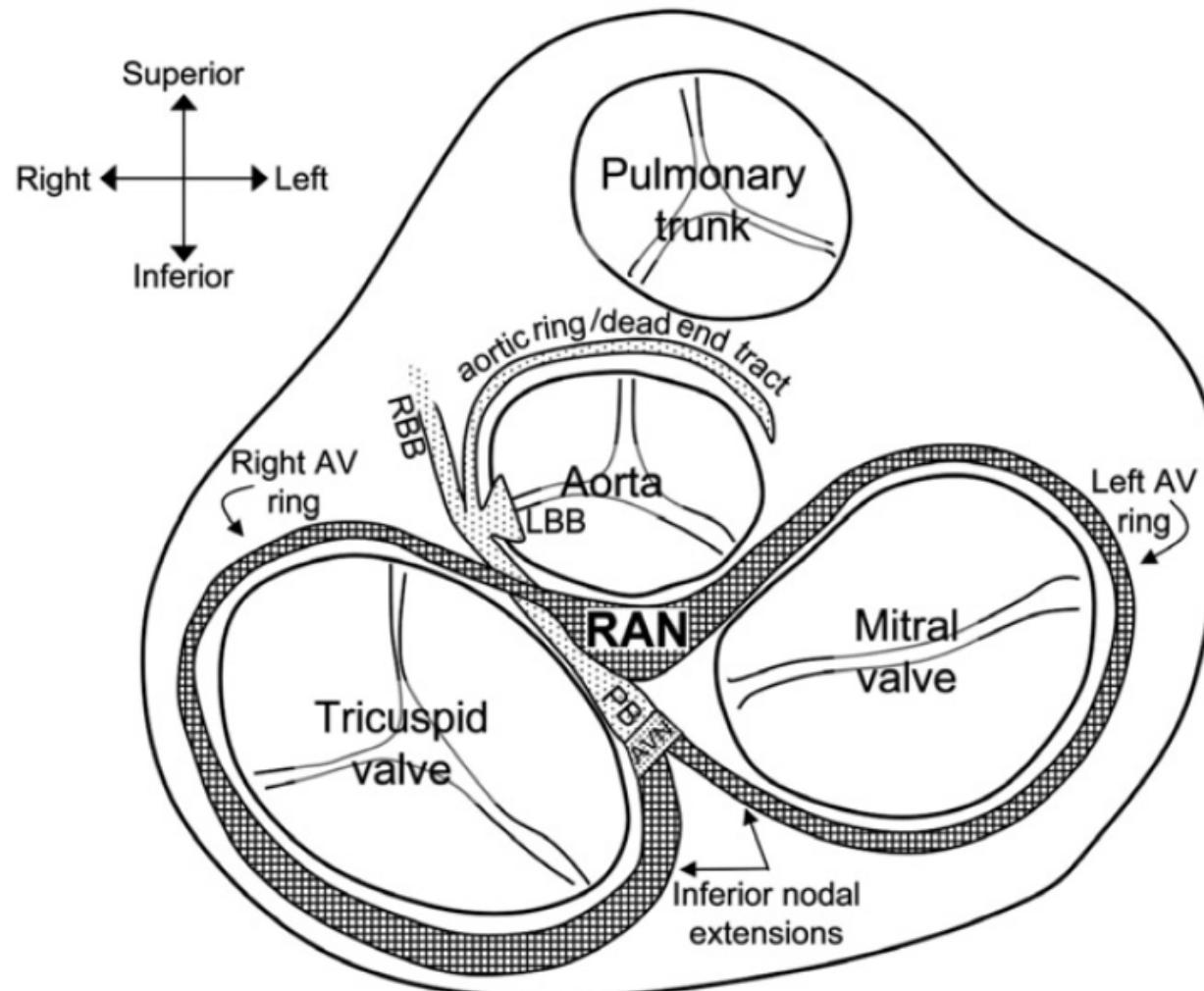
Anatomie – vision d'ensemble



Anatomie – Branches D+G

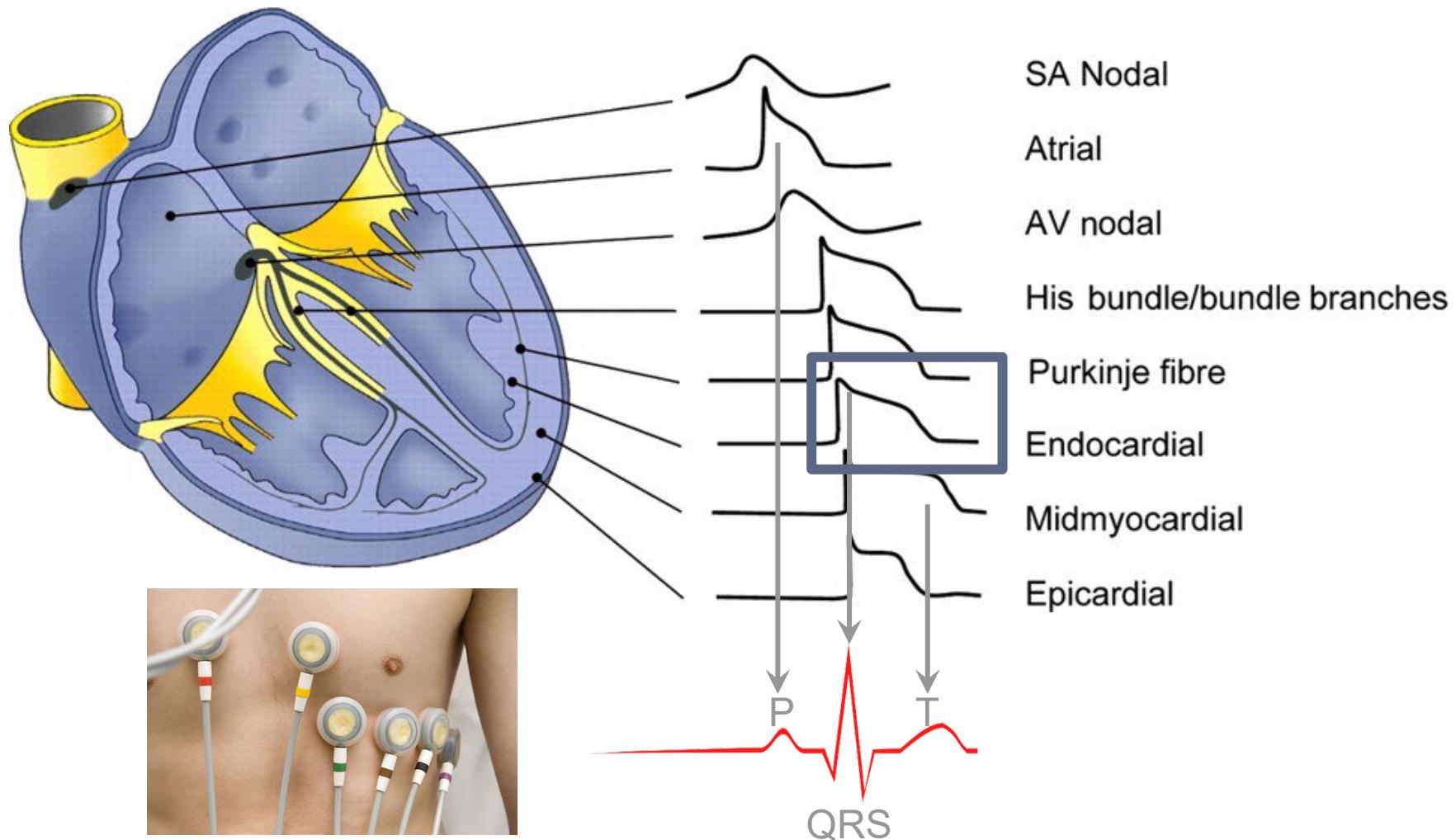


Anatomie – Valves cardiaques



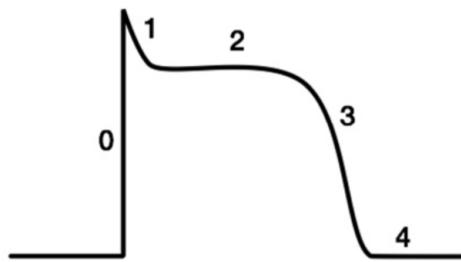
Yanni et al. *Heart Rhythm* 2009

Électrophysiologie cardiaque



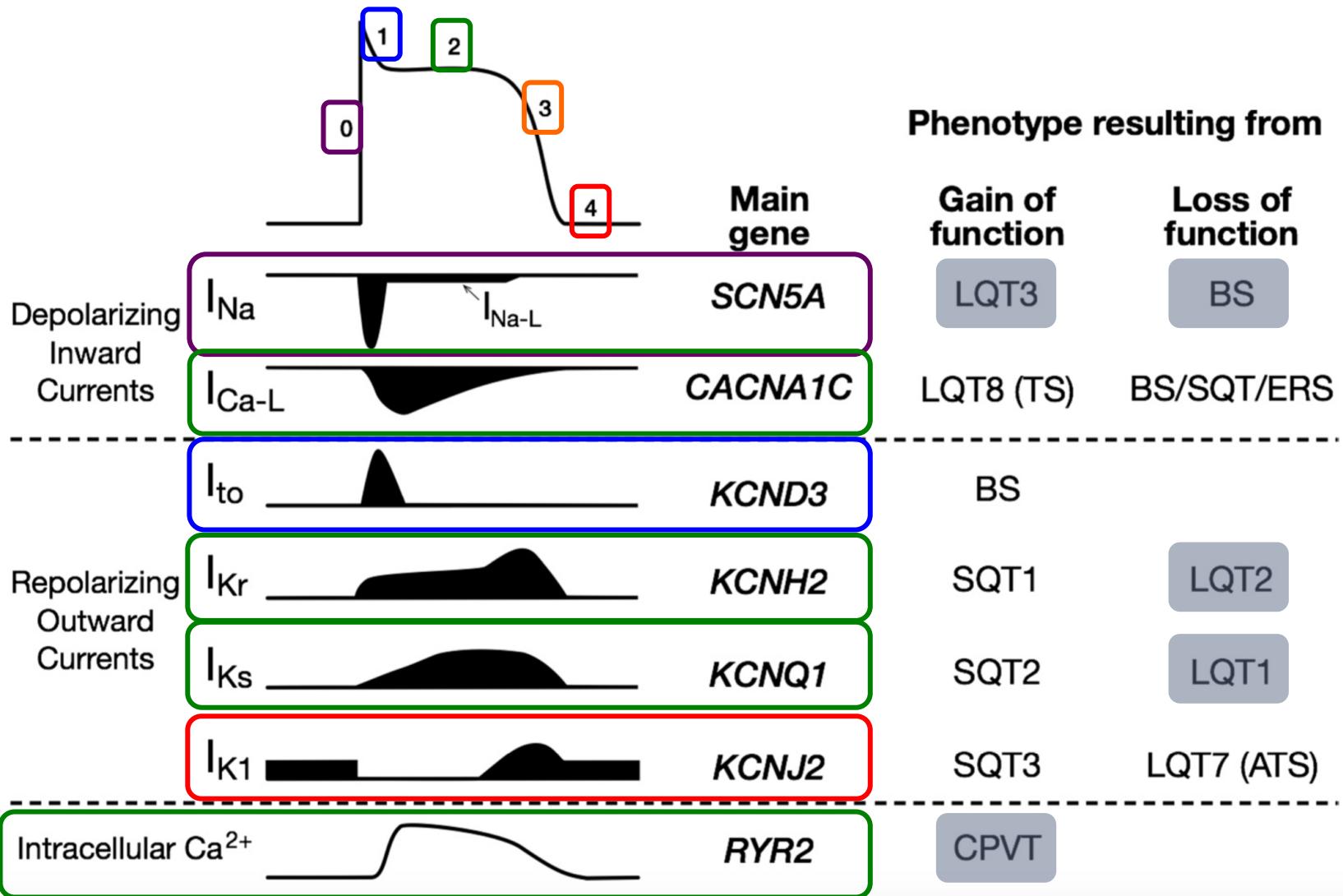
Postma et al. *Cardiovasc Res* 2011

Potentiel d'action ventriculaire



Tadros et al. *Expert Rev Cardiovasc Ther* 2015

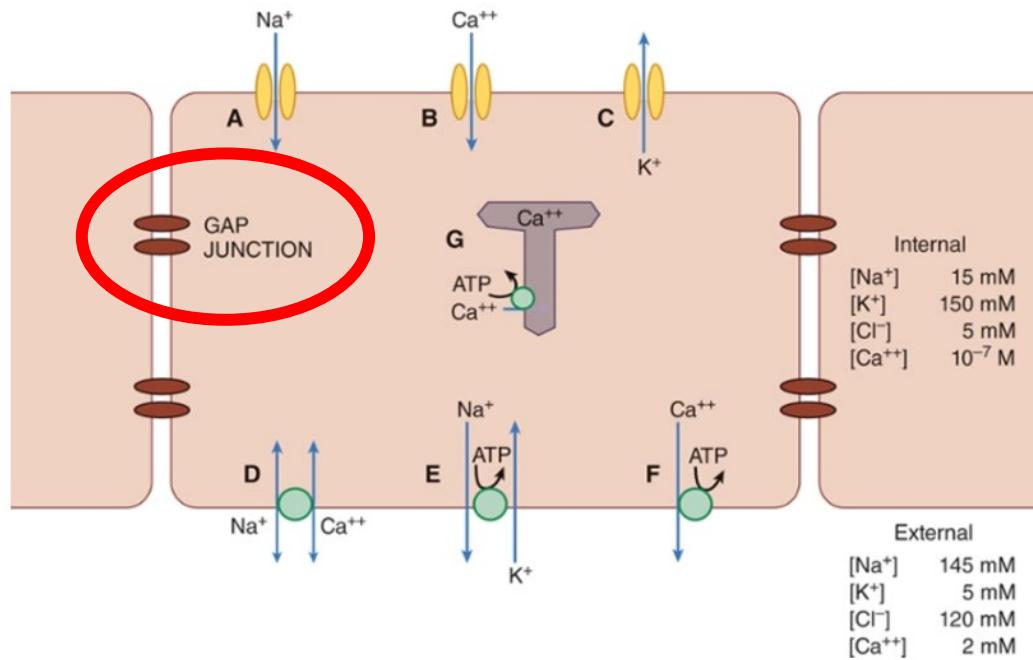
Potentiel d'action ventriculaire



Tadros et al. *Expert Rev Cardiovasc Ther* 2015

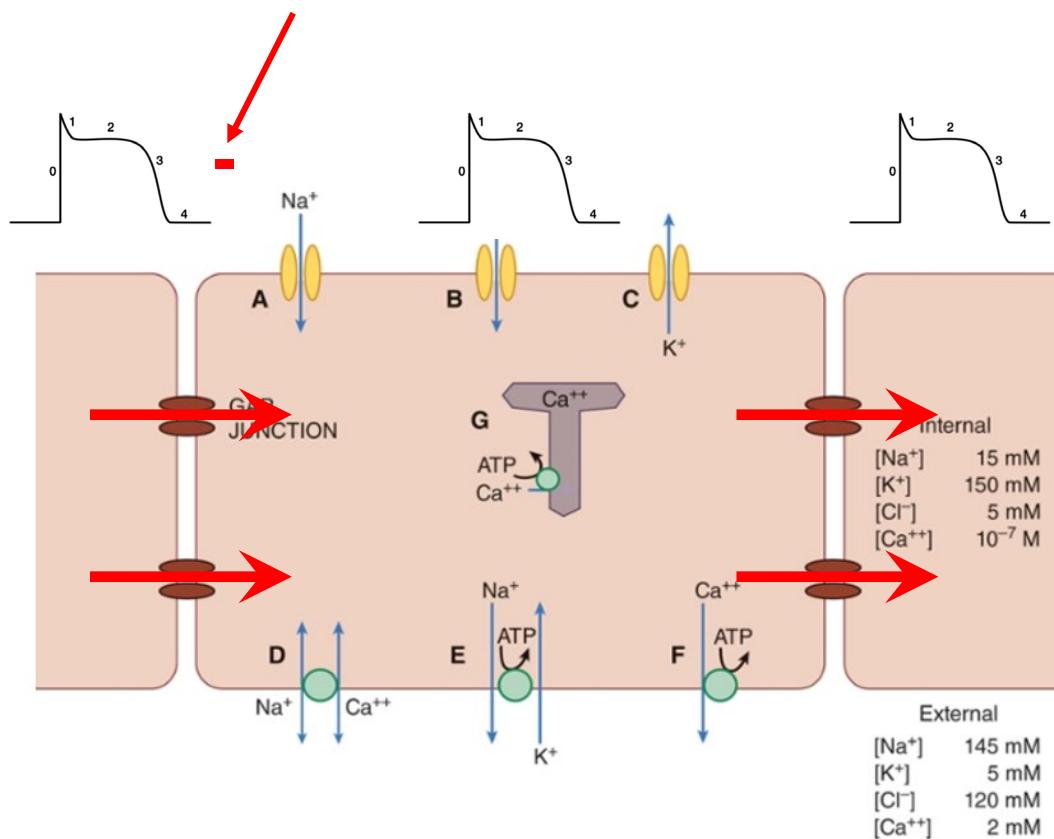
Couplage électrique

Propagation de l'impulsion électrique...



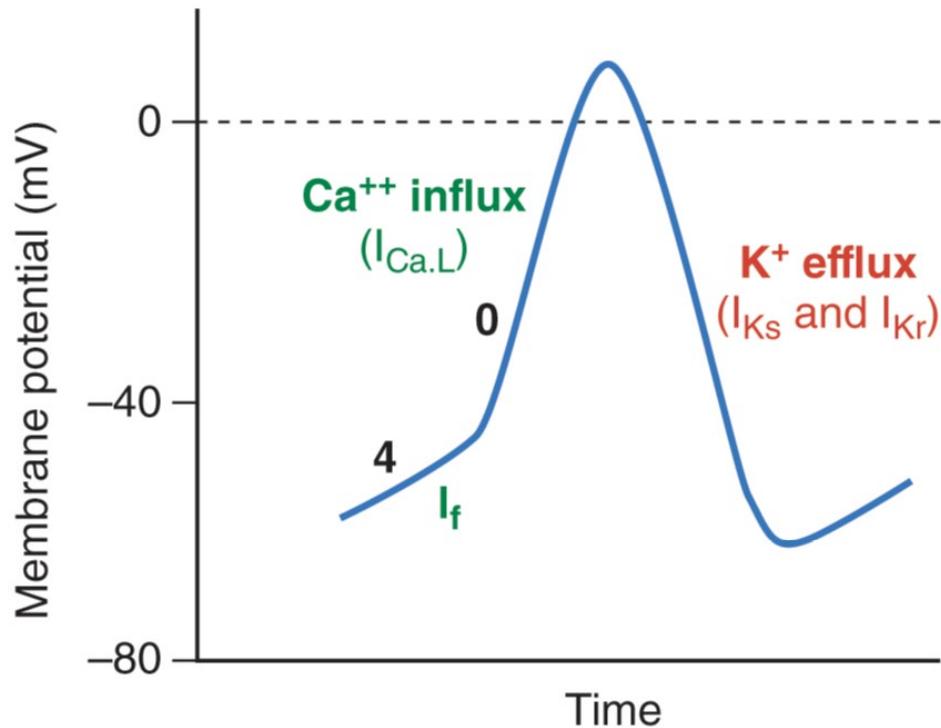
Couplage électrique

Acidose



Cellules automatiques

Formation de l'impulsion électrique...
Cellules “pacemaker” avec activation
spontanée

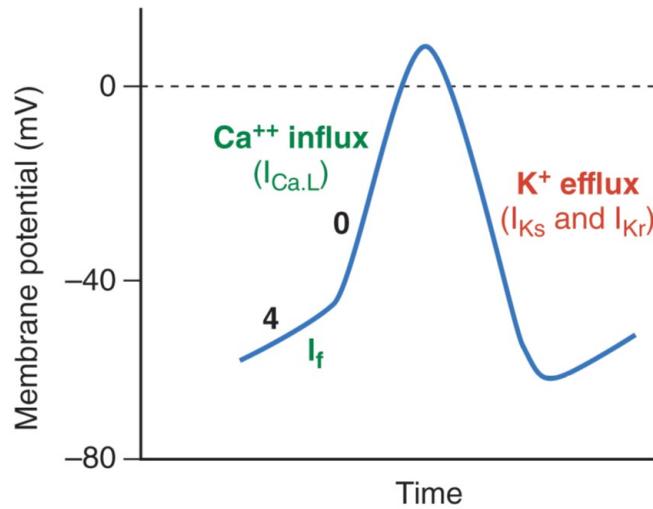


Hiérarchie:

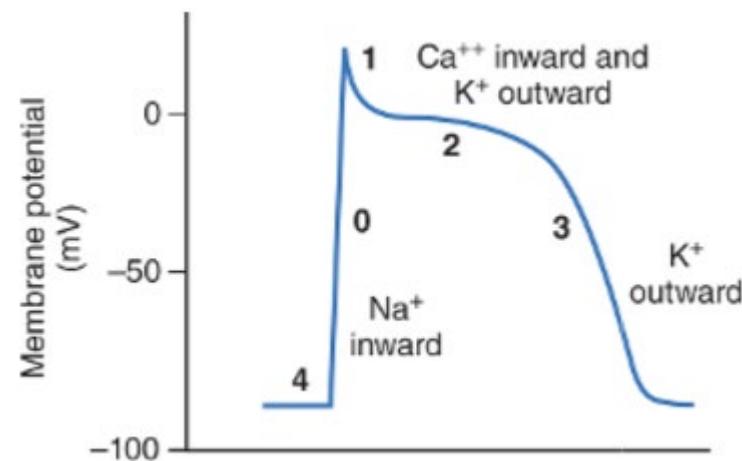
Noeud sinsual (>60bpm)
Noeud AV (~ 40-60bpm)
His-Purkinje (<40bpm)

Cellules automatiques

Cellule automatique
(noeud sinusal, noeud AV)

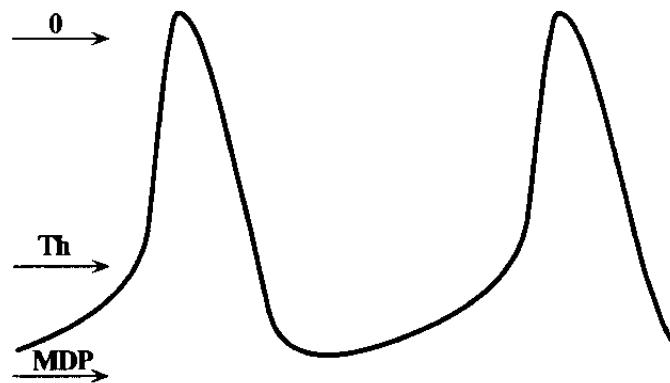


Cellule contractile
(oreillette, ventricule)
ou His-Purkinje

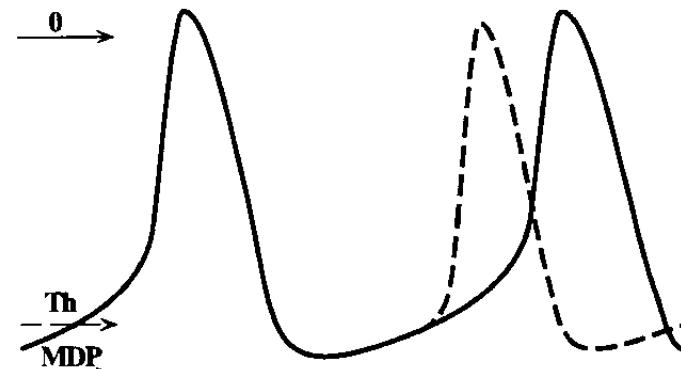


Automaticité

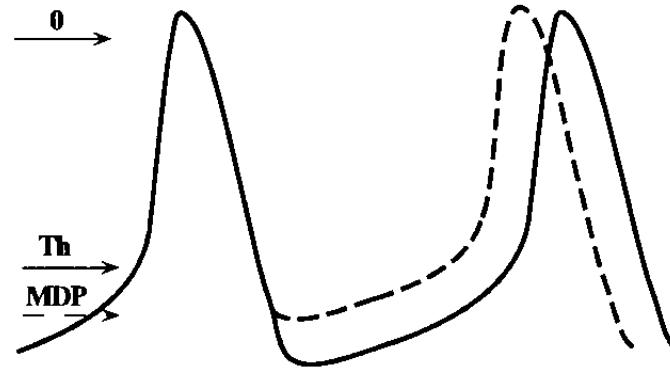
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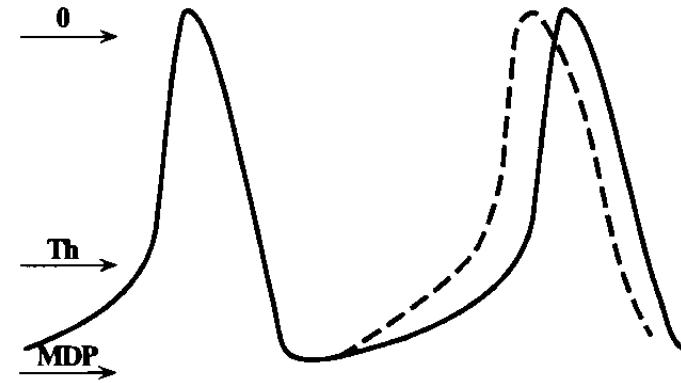
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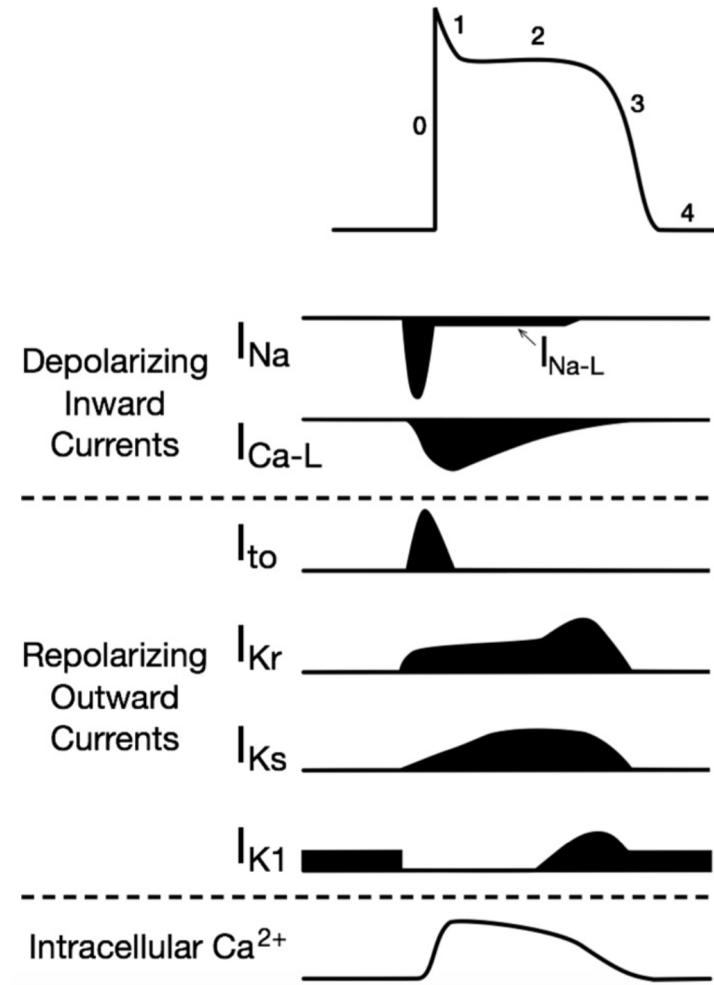
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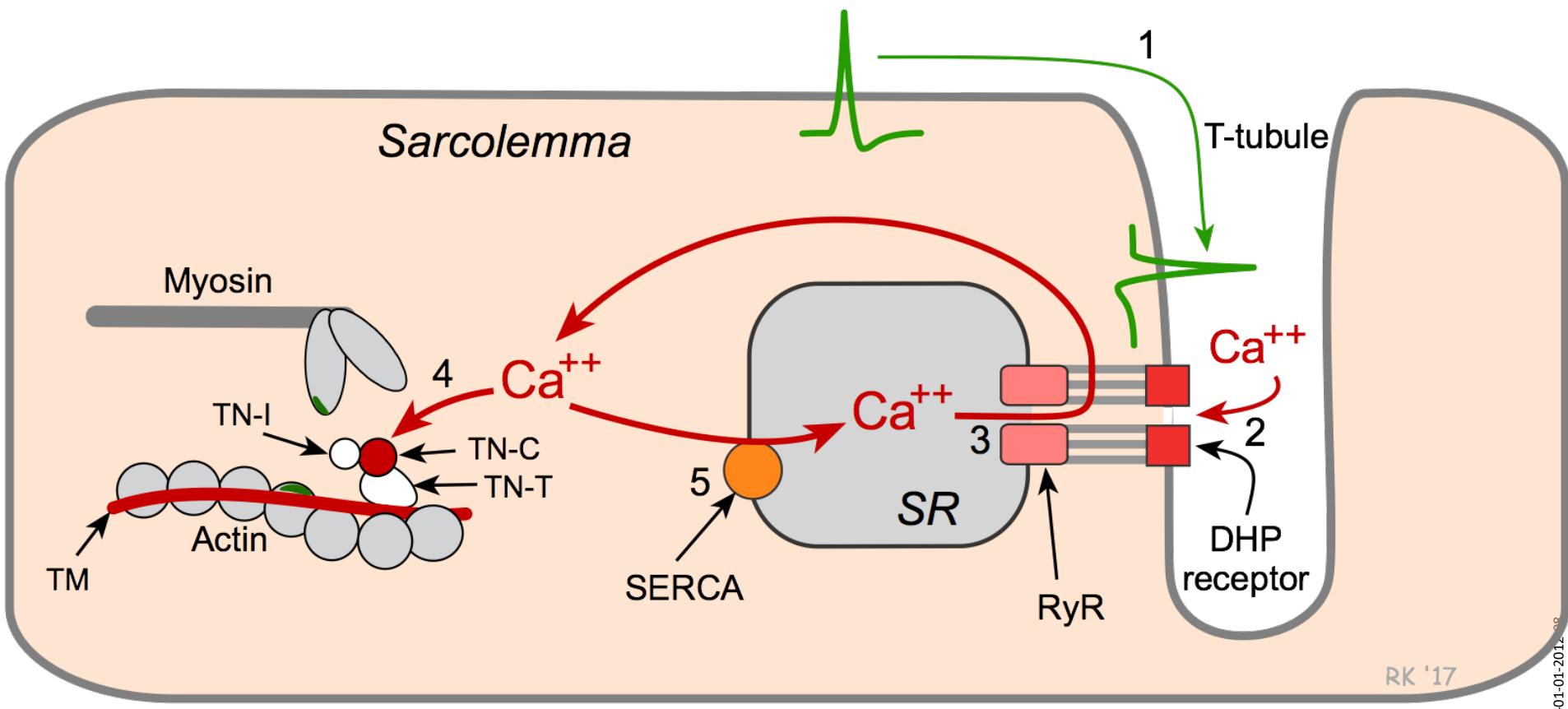
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Couplage Excitation-Contraction



Couplage Excitation-Contraction



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