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Sommario/riassunto	<p>Ca²⁺ is a key second messenger in the intricate workings of the heart. In cardiac myocytes, Ca²⁺ signaling controls or modulates electrophysiological function, excitation-contraction coupling, contractile function, energy balance, cell death, and gene transcription. Thus, diverse Ca²⁺-dependent regulatory processes occur simultaneously within a cell. Yet, distinct signals can be resolved by local Ca²⁺ sensitive protein complexes and differential Ca²⁺ signal integration. In addition to its importance to normal cardiac function, such regulation is also crucial in disease conditions. Ca²⁺ is likely involved in ectopic cardiac rhythms in both atrial and ventricular tissues through generating triggered activity often appearing as delayed afterdepolarisations, particularly following cellular Ca overloading. Recent studies also implicate Ca²⁺ in Na⁺ channel expression and properties with consequences for conduction velocity and therefore arrhythmic substrate. At the cellular level, such regulation involves control of the activity of membrane ion channels and Ca²⁺ handling proteins. These in turn involve multiple extra- and intracellular signaling pathways. This e-book assembles review and original articles from experts in this field. It summarises major recent progress bearing on roles of Ca²⁺ in cardiac electrophysiological function encompassing both normal and abnormal cardiac function. These extend from physiological roles of Ca²⁺ signaling in pacemaker function, in particular generation of sino-atrial pacemaker potentials, to</p>

pathological roles of abnormal Ca²⁺ signaling in both atrial and ventricular arrhythmogenesis. It also seeks to bridge the gap between advances in basic science and development of new therapies.
