Circulation Research
AN OFFICIAL JOURNAL OF THE AMERICAN HEART ASSOCIATION

VOLUME 38
January–June 1976

No. 1 (January)

Serum Dopamine β-Hydroxylase as an Index of Sympathetic Nervous System Activity in Man. Robert H. Noth and Patrick J. Mulrow ........................................ 2
The Response of Atrial Stretch Receptors to Increases in Heart Rate in Dogs. Irving H. Zucker and Joseph P. Gilmore ...................... 15
Effect of Stimulation of Carotid Chemoreceptors on Total and Regional Cerebral Flow. Donald D. Heistad, Melvin L. Marcus, James C. Ehrhardt, and Francois M. Abboud ....... 20
Renal Cortical Blood Flow in Glycerol-Induced Acute Renal Failure in the Rat. Theodore W. Kurtz, Roy M. Maletz, and Chen H. Hsu ............ 30
Atrial Rhythm during Ventricular Fibrillation in the Dog. Allen M. Scher, Robert M. Heethaar, Ariaen N. E. Zimmerman, and Frits L. Meijler ................. 41
Instructions to Authors .................................................................. 46
News from the American Heart Association .................................. 49

No. 2 (February)

Brief Reviews: The Concept of Active State in Striated Muscle. Fred J. Julian and Richard L. Moss ........................................ 53
Inhibition of Prostaglandin E₂ Secretion: Failure to Abolish Autoregulation in the Isolated Dog Kidney. George J. Kaloyanides, Robert E. Ahrens, James A. Shepherd, and Gerald F. DiBona ........................................ 67
Effect of Vagal Stimulation on the Overflow of Norepinephrine into the Coronary Sinus during Cardiac Sympathetic Nerve Stimulation in the Dog. Matthew N. Levy and Benjamin Blattberg ........................................ 81
Triggered Activity in Cardiac Muscle Fibers of the Simian Mitral Valve. Andrew L. Wit and Paul F. Cranefield ........................................ 85
Inhibition of Hypoxic Pulmonary Vasocnstriction by Calcium Antagonists in Isolated Rat Lungs. Ivan F. McMurtry, Allan B. Davidson, John T. Reeves, and Robert F. Grover .......... 99
### CONTENTS OF VOLUME 38

**No. 3 (March)**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contrasting Effects of Hypoglycemia on Plasma Renin Activity and</strong></td>
<td>Stephen C. Lowder, Pavel Hamet, and Grant W. Liddle</td>
<td>105</td>
</tr>
<tr>
<td><strong>Cyclic Adenosine 3',5'-Monophosphate (Cyclic AMP) in Low Renin and</strong></td>
<td>Adam B. Lowder, Pavel Hamet, and Grant W. Liddle</td>
<td></td>
</tr>
<tr>
<td><strong>Normal Renin Essential Hypertension.</strong></td>
<td>Stephen C. Lowder, Pavel Hamet, and Grant W. Liddle</td>
<td></td>
</tr>
<tr>
<td><em>Brief Reviews: Cardiovascular and Pulmonary Dynamics by Quantitative Imaging. Earl H. Wood</em></td>
<td><em>Earl H. Wood</em></td>
<td>131</td>
</tr>
<tr>
<td>Electron Microscopic Immunohistochemical Identification of Endothelial Cells in the Rabbit. Michael B. Stemerman, Frances A. Pitlick, and Herbert M. Dembitzer</td>
<td>Michael B. Stemerman, Frances A. Pitlick, and Herbert M. Dembitzer</td>
<td>146</td>
</tr>
<tr>
<td>The Effects of Tension on Acetylstrophanthin-induced Transient Depolarizations and Aftercontractions in Canine Myocardial and Purkinje Tissues. Gregory R. Ferrier</td>
<td>Gregory R. Ferrier</td>
<td>156</td>
</tr>
<tr>
<td>Vascular Responses to Arachidonic Acid in the Perfused Canine Lung. Thomas C. Wicks, John C. Rose, Malcolm Johnson, Peter W. Ramwell, and Peter A. Kot</td>
<td>Thomas C. Wicks, John C. Rose, Malcolm Johnson, Peter W. Ramwell, and Peter A. Kot</td>
<td>167</td>
</tr>
<tr>
<td>Adaptations of the Left Ventricle to Chronic Pressure Overload. Shigetake Sasayama, John Ross, Jr., Dean Franklin, Colin M. Bloor, Sanford Bishop, and Ralph B. Dilley</td>
<td>Shigetake Sasayama, John Ross, Jr., Dean Franklin, Colin M. Bloor, Sanford Bishop, and Ralph B. Dilley</td>
<td>172</td>
</tr>
<tr>
<td>Depletion of Cardiac Norepinephrine during Two Forms of Hemolytic Anemia in the Rat. John W. Swann and Joseph F. Contrera</td>
<td>John W. Swann, Joseph F. Contrera</td>
<td>179</td>
</tr>
<tr>
<td>The Effect of Lidocaine on Diastolic Transmembrane Currents Determining Pacemaker Depolarization in Cardiac Purkinje Fibers. Francis M. Weld and J. Thomas Bigger, Jr.</td>
<td>Francis M. Weld and J. Thomas Bigger, Jr.</td>
<td>203</td>
</tr>
<tr>
<td>Letters to the Editor</td>
<td></td>
<td>215</td>
</tr>
<tr>
<td>News from the American Heart Association</td>
<td></td>
<td>217</td>
</tr>
</tbody>
</table>

**No. 4 (April)**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
</table>
Effects of Activation Sequence on the Local Recovery of Ventricular Excitability in the Dog. J. A. Abildskov .................................................. 240
The Relationship between Age and Relaxation of Vascular Smooth Muscle in the Rabbit and Rat. Jerome H. Fleisch and Carol S. Hooker .................. 243
Relationships between Pressure and Flow in the Umbilical and Uterine Circulations of the Sheep. William Berman, Jr., Robert C. Goodlin, Michael A. Heymann, and Abraham M. Rudolph .... 262
The Vascular Basis for Acute Renal Failure in the Rat: Preglomerular and Postglomerular Vasoconstriction. Manjeri A. Venkatachalam, Helmut G. Rennke, and Deborah J. Sandstrom .... 267
Cardiac Performance in Rats with Renal Hypertension. David B. Averill, Carlos M. Ferrario, Robert C. Tarazi, Subha Sen, and Ron Bajbus ........ 280
Length-Induced Changes in Activation during Contraction: A Study of Mechanical Oscillations in Strontium-Mediated Contractions of Cat and Frog Heart Muscle. Andrew H. Henderson and Martin R. Cattell ........... 289
The Pumping Ability of the Left Heart and the Effect of Coronary Occlusion. Gis Elzinga and Nicolaas Westerhof .......................... 297
Electrophysiological and Antiarrhythmic Effects of Propranolol in Canine Acute Myocardial Ischemia. Joel Kupersmith, Howard Shiang, Robert S. Litwak, and Michael V. Herman .................. 302
The Role of Arterial Baroreceptors in Mediating the Cardiovascular Response to a Cardiac Glycoside in Conscious Dogs. Robert J. McRitchie and Stephen F. Vatner ........ 321
News from the American Heart Association .................................. 327

No. 5 (May)

Brief Reviews: Macromolecules of the Extracellular Compartment of Embryonic and Mature Hearts. Francis J. Manasek .......................................................... 331
Vascular Capacitance and Fluid Shifts in Dogs during Prolonged Hemorrhagic Hypotension. Carl F. Rothe and John A. Drees .................. 347
Atrial Receptors with Nonmedullated Vagal Afferents in the Cat: Discharge Frequency and Pattern in Relation to Atrial Pressure. Peter N. Thorén ........ 357
Electrogenesis of Increased Norepinephrine Sensitivity of Arterial Vascular Muscle in Hypertension. Kent Hermesmeyer ........ 362
The Relationship between Overdrive Suppression and Overdrive Excitation in Ventricular Pacemakers in Dogs. Mario Vassalle, Michael Cummins, Carlos Castro, and Jackson H. Stuckey .............................................. 367

Abnormal Ion and Water Composition of Veins and Normotensive Arteries in Coarctation Hypertension in Rats. Motilal B. Pamnani and Henry W. Overbeck .................. 375


Experimental Evidence for Regional Cardiac Influence in Body Surface Isopotential Maps of Dogs. J.A. Abildskov, Mary Jo Burgess, Robert L. Lux, and Roland F. Wyatt .......... 386


Mechanical Stimuli Exciting Type A Atrial Vagal Receptors in the Cat. Giorgio Recordati, Federico Lombardi, Vernon S. Bishop, and Alberto Malliani .......... 397

Substructure of Intercellular Junctions in Freeze-Fractured Alveolar-Capillary Membranes of Mouse Lung. Eveline E. Schneeberger and Morris J. Karnovsky ............ 404

Altered Venous Function in Hypertensive Rats. Geza Simon ................................................. 412

Effects of Acetylsalicylic Acid on the Ductus Arteriosus and Circulation in Fetal Lambs in Utero. Michael A. Heymann and Abraham M. Rudolph .................. 418

Pumping Ability of the Hypertrophying Left Ventricle of the Spontaneously Hypertensive Rat. Marc A. Pfeffer, Janice M. Pfeffer, and Edward D. Frohlich .......... 423

Regional Myocardial Blood Flow during Acute Myocardial Infarction in the Conscious Dog. Sanford P. Bishop, Francis C. White, and Colin M. Bloor .......... 429

Relationship between Blood Flow to Ischemic Regions and Extent of Myocardial Infarction: Serial Measurement of Blood Flow to Ischemic Regions in Dogs. Frank Rivas, Frederick R. Cobb, Robert J. Bache, and Joseph C. Greenfield, Jr .............. 439

Depression of Atrioventricular Sensitivity in the Dog by Successive Brief Bursts of Vagal Stimulation. Paul Martin ......................................................... 448

Letters to the Editor .......................................................... 454

News from the American Heart Association ......................................................... 456

No. 6 (June)

Brief Reviews: Fatty Acids as Substrates for Heart and Skeletal Muscle. Kenneth L. Zierler .......... 459

Combined Effects of Rate, Membrane Potential, and Drugs on Maximum Rate of Rise (Vmax) of Action Potential Upstroke of Guinea Pig Papillary Muscle. Chia-Maou Chen and Leonard S. Gettes ........ 464

Relation between Plasma Renin Activity, Angiotensin, and Aldosterone and Blood Pressure in Mild Untreated Hypertension. W. Gordon Walker, John S. Horvath, Michael A. Moore, Paul Whelton, and R. Patterson Russell .............. 470


Plasma Renin Activity during Exercise in the Dog. Meyer D. Lifschitz and Lawrence D. Horwitz .................................................. 483

The Relevance of Peripheral Baroreceptors and Chemoreceptors to Regulation of Cerebral Blood Flow in the Cat. David Bates and Thoralf M. Sundt, Jr ............. 488

Arterial Lesions in Repeatedly Bred Spontaneously Hypertensive Rats. Bernard C. Wexler, Samuel G. Iams, and Joseph T. Judd ........................................... 494
Enhanced Aldosterone Response to Angiotensin II in Human Hypertension. E.S. Kisch, R.G. Dluhy, and G.H. Williams ................................................................. 502


Turbulent Blood Flow in Humans: Its Primary Role in the Production of Ejection Murmurs. Hani N. Sabbah and Paul D. Stein ................................................................. 513

Basal Vascular Tone in the Kidney: Evaluation from the Static Pressure-Flow Relationship under Normal Autoregulation and at Maximal Dilation in the Dog. Rainer Gross, Hartmut Kirchheim, and Kurt Brandstetter ................................................................. 525

The Effects of Altered Sodium Balance and Adrenergic Blockade on Renin Release Induced in Rats by Angiotensin Antagonism. T. Kent Keeton, William A. Pettinger, and William B. Campbell ................................................................. 531

Experimental Myocardial Infarction in the Cat. I. Reversible Decline in Contractility of Non-infarcted Muscle. Peter Mathes, Dietmar Romig, Dieter Sack, and Wolfgang Erhardt ................................................................. 540

Modification of the Flow-Generating Capability of the Canine Heart-Lung Compartment by the Carotid Sinus Baroreceptor Reflex. David P. Kostiuk, Kiichi Sagawa, and Artin A. Shoukas ................................................................. 546

Effects of Chronic Anemia on the Coronary and Coronary Collateral Vasculature in Dogs. Konrad W. Scheel, Daniel A. Brody, Leslie A. Ingram, and Francis Keller ................................................................. 553

Cutaneous and Muscular Vasodilation in the Canine Hindlimb Evoked by Central Stimulation. William J. Lang, Christopher Bell, Elizabeth L. Conway, and Robert Padanyi ................................................................. 560

Regional Cardiac Prostaglandin Release during Myocardial Ischemia in Anesthetized Dogs. Harvey J. Berger, Barry L. Zaret, Leon Speroff, Lawrence S. Cohen, and Steven Wolfson ................................................................. 566

Vessel Caliber and Branch-Angle of Human Coronary Artery Branch-Points. Grover M. Hutchins, Martin M. Miner, and John K. Boitnott ................................................................. 572

Books Received ................................................................. 577

News from the American Heart Association ................................................................. 578

Volume Author Index ................................................................. 581

Volume Subject Index ................................................................. 583