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# 2006 Abstracts

Twenty-Eighth Annual Meeting of the American Society for Bone and Mineral Research

Pennsylvania Convention Center Philadelphia, Pennsylvania, USA September 15–19, 2006



PUBLISHED MONTHLY BY THE AMERICAN SOCIETY FOR BONE AND MINERAL RESEARCH

# ASBMR 28<sup>th</sup> Annual Meeting Official Program

	NOTE: All rooms are	in the Pennsylvania Convention Center	unless otherwise noted.	
Friday, September 15	Saturday, September 16	Sunday, September 17	Monday, September 18	Tuesday, September 19
<u>9:25 a.m. – 9:30 a.m.</u>	7:00 a.m. – 8:00 a.m.	7:00 a.m. – 8:00 a.m.	<u>6:00 a.m. – 7:00 a.m.</u>	<u>8:00 a.m. – 8:05 a.m</u> .
Presentation of The Sevgi and Gideon	New Investigator/New Member Breakfast	Advocacy Breakfast: Funding Cuts and the	ASNMR Fun Run/Walk	Presentation of Louis V. Avioli
Rodan IBMS Fellowship	Room 103AB	Politics of Science: The Future of NIH and	Buses depart from Philadelphia Marriott	Memorial Founders Award
Ballroom B		Biomedical Research		Ballroom B
	<u>8:00 a.m. – 6:00 p.m.</u>	Marriott: Grand Ballroom, Salon C	<u>8:00 a.m. – 4:30 p.m.</u>	
<u>9:30 a.m. – 12:00 p.m.</u>	Posters Open - Hall A		Posters Open - Hall A	<u>8:05 a.m. – 9:05 a.m.</u>
ASBMR/IBMS Joint Symposium		<u>7:00 a.m. – 8:00 a.m.</u>		Louis V. Avioli Memorial Lecture
Fat and Bone	8:00 a.m. – 8:10 a.m.	ASBMR Minority Breakfast	<u>8:00 a.m. – 8:05 a.m.</u>	(Henry M. Kronenberg, M.D.)
Ballroom B	Welcome & Announcements	Marriott: Grand Ballroom, Salon D	Presentation of Frederic C. Bartter Award	Ballroom B
	Ballroom AB		Ballroom B	
<u>12:00 p.m. – 1:00 p.m.</u>		<u>8:00 a.m. – 9:30 a.m.</u>		<u>9:05 a.m. – 9:30 a.m.</u>
Meet-the-Professor Sessions	<u>8:10 a.m. – 8:30 a.m.</u>	Featured Basic Symposium: Osteoclast Signaling	<u>8:05 a.m. – 9:35 a.m.</u>	Coffee Break
Rooms 104 - 107	Presentation of ASBMR Awards:	and Function - Ballroom A	Plenary Symposium: Vitamin D: From Bench	Ballroom Foyer
	(8:10 a.m.) William F. Neuman Award		to Bedside - Ballroom B	
<u>12:30 p.m. – 1:30 p.m.</u>	(8:15 a.m.) Fuller Albright Award	<u>8:00 a.m. – 9:30 a.m.</u>		<u>9:30 a.m. – 11:30 a.m.</u>
Clinical Roundtable/Case Conference	(8:20 a.m.) Gideon A. Rodan Excellence in	Clinical Session: New Technology, Treatments	<u>9:30 a.m. – 4:30 p.m.</u>	Concurrent Oral Sessions
Ballroom B	Mentorship Award	and Trials for Osteoporosis -Ballroom B	Exhibits Open - Hall A	41) Osteoblasts VI - Room
2.00 2.20	(8:25 a.m.) Shirley Hohl Service Award		0.25 10.00	201ABC
<u>2:00 p.m. – 3:30 p.m.</u>	Ballroom AB	<u>8:00 a.m. – 6:00 p.m.</u>	<u>9:35 a.m. – 10:00 a.m.</u>	42) Osteoclasts III - <i>Room 204C</i>
Symposium A (Basic): New Advances in		Posters Open - Hall A	Coffee Break - Hall A	43) Osteoporosis Epidemiology IV-
Bone Evolutionary Biology	<u>8:30 a.m. – 9:30 a.m.</u>	0.20 a m 4.20 m m	10:00 a m 11:30 a m	Ballroom A
Ballroom A	Gerald Aurbach Memorial Lecture	<u>9:30 a.m. – 4:30 p.m.</u> Exhibits Open - <i>Hall A</i>	<u>10:00 a.m. – 11:30 a.m.</u> Concurrent Oral Sessions	44) Osteoporosis Treatment V - Ballroom B
Sumposium B (Clinical), Cood, Cood	(Elaine Fuchs, Ph.D.)	Exhibits Open - Hall A		
Symposium B (Clinical): Good, Good, Good Vibrations: Evidence for the	Ballroom AB	0.20 a m $10.00$ a m	25) Osteoblasts IV - <i>Room 201ABC</i> 26) Osteoclasts II - <i>Room 204AB</i>	45) Mechanical Loading and Exercise III - <i>Room 204AB</i>
Therapeutic Potential of Low-Magnitude,		<u>9:30 a.m. – 10:00 a.m.</u> Coffee Break- <i>Hall A</i>	27) Osteoporosis Treatment III - <i>Ballroom B</i>	46) Genetics of Bone and Mineral
High Frequency Mechanical Signals	<u>9:30 a.m. – 4:30 p.m.</u>	Collee Dieak- Hall A	28) Other Disorders of Bone and Mineral	Disorders II - <i>Room 203AB</i>
Ballroom B	Exhibits Open - Hall A	<u>10:00 a.m. – 11:30 a.m.</u>	Metabolism III - <i>Ballroom A</i>	Disorders II - Noom 203AD
Daill Com D		Concurrent Oral Sessions	29) Bone Acquisition and Pediatric Bone	<u>11:30 a.m.</u>
<u>3:45 p.m. – 5:15 p.m.</u>	<u>9:30 a.m. – 10:00 a.m.</u>	13) Osteoblasts II - <i>Ballroom A</i>	Disease III - <i>Room 203AB</i>	Adjourn
Symposium C (Basic):	Coffee Break - Hall A	14) Osteoclasts I - <i>Room 204C</i>	30) Mechanical Loading and Exercise II -	Aujourn
Osteoimmunology	10.00 11.20	15) Osteoporosis Treatment II - <i>Ballroom B</i>	Room 204C	
Room 201ABC	<u>10:00 a.m. – 11:30 a.m.</u>	16) Osteoporosis Pathophysiology II –	100112010	
	Concurrent Oral Sessions	Room 201ABC	Poster Session III - Hall A	
Symposium D (Clinical): Skeletal	1) Osteoblasts I - <i>Room 201ABC</i>	17) Cancer and Bone I - <i>Room 204AB</i>	ODD: 11:30 a.m. – 1:00 p.m.	
Development and Pediatric Bone	2) Peptide Calciotropic Hormones and Mineral Metabolism I - <i>Room 204C</i>	18) Bone Acquisition and Pediatric Bone	EVEN: 1:00 p.m. – 2:30 p.m.	
Disease	3) Steroid Hormones I - <i>Room 203AB</i>	Disease II - Room 203AB		
Ballroom A	4) Osteoporosis: Epidemiology I –		<u>11:30 a.m. – 12:30 p.m.</u>	
	Ballroom B	<u>11:30 a.m. – 12:30 p.m</u>	Meet-the-Professor Sessions	
Symposium E (Clinical): Absolute	5) Osteoporosis: Pathophysiology I -	NIH Realities and Strategies for the Future	Rooms 104 - 107	
Fracture Risk: An Update	Ballroom A	(Elias A. Zerhouni, NIH Director)		
Ballroom B	6) Other Disorders of Bone and Mineral	Room 203AB	<u>12:30 p.m. – 1:30 p.m.</u>	
	Metabolism I - <i>Room 204AB</i>		Clinical Roundtable/Case Conference	
<u>5:15 p.m. – 7:00 p.m.</u>		Poster Session II - Hall A	Ballroom B	
Welcome Reception & Plenary Poster	Poster Session L. U.C.	ODD: 11:30 a.m. – 1:00 p.m.		
Session - Hall A	Poster Session I - Hall A ODD: 11:30 a.m. – 1:00 p.m.	EVEN: 1:00 p.m. – 2:30 p.m.	<u>12:30 p.m. – 2:00 p.m.</u>	
	EVEN: 1:00 p.m. – 2:30 p.m.		Career Options for Scientists Workshop	
<u>5:15 p.m. – 7:00 p.m.</u>	LVLIN. 1.00 p.m. – 2.30 p.m.	<u>11:30 a.m. – 12:30 p.m.</u>	Room 203AB	
Posters and Exhibit Open - Hall A		Meet-the-Professor Sessions		
		Rooms 104 - 107		

Saturday, September 16 (continued)	Sunday, September 17 (continued)	Monday, September 18 (continued)	
<u>11:30 a.m. – 12:30 p.m.</u> Meet-the-Professor Sessions <i>Rooms 104 - 107</i>	<u>12:30 p.m. – 2:00 p.m.</u> Clinical Session: Disorders of Bone and Mineral Metabolism – Selected Topics <i>Ballroom B</i>	<u>1:30 p.m. – 2:30 p.m.</u> Meet-the-Professor Sessions <i>Rooms 104 - 107</i>	
<u>12:00 p.m. – 2:00 p.m.</u> Special Session for Allied Health Professionals - <i>Room 204AB</i> <u>12:30 p.m. – 1:30 p.m.</u> Clinical Roundtable/Case Conference <i>Ballroom B</i>	<u>12:30 p.m. – 2:00 p.m.</u> Biotechniques Workshop on Bone Histomorphometry <i>Room 204AB</i> <u>1:30 p.m. – 2:30 p.m.</u>	2:30 p.m. – 4:00 p.m. Concurrent Oral Sessions 31) Bone, Cartilage and Connective Tissue Matrix III - <i>Room 204AB</i> 32) Growth Factors and Cytokines III – <i>Room 201ABC</i> 33) Peptide Calciotropic Hormones and	
<u>12:30 p.m. – 2:00 p.m.</u> Grant Writing Workshop <i>Room 103AB</i>	Meet-the-Professor Sessions <i>Rooms 104 - 107</i> <u><b>2:30 p.m. – 4:00 p.m.</b></u> Concurrent Oral Sessions	Mineral Metabolism II - <i>Room 204C</i> 34) Osteoporosis Epidemiology III – <i>Ballroom B</i> 35) Diagnostic Assessment of Osteoporosis and Other Disorders of Bone and Mineral	
<u>1:30 p.m. – 2:30 p.m.</u> Meet-the-Professor Sessions <i>Rooms 104 - 107</i> <u>2:30 p.m. – 4:00 p.m.</u> Concurrent Oral Sessions	<ul> <li>19) Osteoblasts III - <i>Room 201ABC</i></li> <li>20) Bone, Cartilage and Connective Tissue Matrix</li> <li>II - <i>Room 203AB</i></li> <li>21) Growth Factors and Cytokines II - <i>Room 204AB</i></li> <li>22) Osteoporosis Epidemiology II - <i>Ballroom B</i></li> </ul>	Metabolism II - <i>Ballroom A</i> <u>4:00 p.m. – 4:30 p.m.</u> Coffee Break <i>Hall A</i>	
<ul> <li>7) Bone, Cartilage and Connective Tissue Matrix I - <i>Room 204AB</i></li> <li>8) Growth Factors and Cytokines I – <i>Room 201ABC</i></li> <li>9) Osteoporosis Treatment I - <i>Ballroom B</i></li> <li>10) Diagnostic Assessment of Osteoporosis and Other Disorders of Bone and Mineral</li> </ul>	<ul> <li>22) Osteopolosis Epidemiology II - Dainboln B</li> <li>23) Other Disorders of Bone and Mineral Metabolism II - Ballroom A</li> <li>24) Mechanical Loading and Exercise I - Room 204C</li> <li><u>4:00 p.m 4:30 p.m.</u> Coffee Break - Hall A</li> </ul>	<u>4:30 p.m. – 6:00 p.m.</u> Concurrent Oral Sessions 36) Osteoblasts V - <i>Room 201ABC</i> 37) Steroid Hormones II - <i>Room 204AB</i> 38) Osteoporosis Treatment IV - <i>Ballroom B</i> 39) Osteoporosis Pathophysiology III - <i>Ballroom A</i>	
Metabolism - <i>Ballroom A</i> 11) Genetics of Bone and Mineral Disorders I - <i>Room 204C</i> 12) Bone Acquisition and Pediatric Bone Disease I - <i>Room 203AB</i>	<u>4:30 p.m. – 6:00 p.m.</u> State-of-the-Art Lectures A (Basic): Recent Advances in Mineral Ion Homeostasis <i>Ballroom A</i>	40) Cancer and Bone II - <i>Room 204C</i> <u>6:00 p.m. – 7:30 p.m.</u> Foundations for Effective Negotiation Workshop - <i>Room 204C</i>	
<u>4:00 p.m. – 4:30 p.m.</u> Coffee Break - <i>Hall A</i> <u>4:30 p.m. – 6:00 p.m.</u> State-of-the-Art Lectures A (Basic):	State-of-the-Art Lectures B (Clinical): Selected Clinical Topics in Cancer and Bone <i>Ballroom B</i> <u>6:00 p.m. – 7:30 p.m.</u>		
Cancer and Bone – Basic/Translational Ballroom A State-of-the-Art Lectures B (Clinical): Estrogen After the WHI	The Women in Bone and Mineral Research Committee Event <i>Room 103AB</i> 8:00 p.m. – 12:00 a.m.		
Ballroom B <u>6:00 p.m. – 7:00 p.m.</u> ASBMR Annual Business Meeting <i>Room 203AB</i>	ASBMR Social Event Franklin Institute		

## 2006 Ancillary Program

Wednesday, September 13	Friday, September 15	Saturday, September 16	er unless otherwise noted. Sunday, September 17	Monday, September 18
THE INTERNATIONAL SOCIETY FOR CLINICAL DENSITOMETRY (ISCD)*	WORKING GROUPS	WORKING GROUPS	INDUSTRY-SUPPORTED SYMPOSIA (ISS)	ASBMR
7:30 a.m. – 11:30 a.m.	7:00 pm – 9:00 pm	7:00 p.m. – 9:15 p.m.	CANCELED	<u>6:00 a.m. – 7:00 a.m.</u>
ISCD Bone Densitometry Course:	Working Group on Rheumatic	Non-Invasive Assessment of Bone	6:00 a.m. – 8:00 a.m.	ASBMR Fun Run/Walk
Clinician and Technologist Courses	<b>a</b>	Microarchitecture Working Group		Supported by Novartis
		s :		
- General Session	Room 103C	Room 204C	with Parathyroid Hormone	Pharmaceuticals
Loews: Regency Ballroom B				Buses depart from the
	<u>7:00 p.m. – 9:15 p.m.</u>	<u>7:00 p.m. – 10:00 p.m.</u>		Philadelphia Marriott
12:30 p.m. – 5:30 p.m.	Nutrition and Bone Health Working	Vitamin D Workshop Working Group		
ISCD Bone Densitometry Clinician	Group	Room 103C		
		1001111000		
Course	Room 203AB			
Loews: Regency Ballroom B		<u>7:00 p.m. – 10:00 p.m.</u>		
	<u>7:00 p.m. – 9:30 p.m.</u>	Molecular Biology and Pathology of		
	Muscle and Bone Working Group	Bone Working Group		WORKING GROUPS
12:30 p.m. – 5:30 p.m.	Room 103A	Room 204AB		
	Noom room	1001120470		6:30 pm – 8:40 pm
ISCD Bone Densitometry				Physical Activity and Falls
Technologist Course	<u>7:00 p.m. – 9:15 p.m</u> .	<u>7:00 p.m. – 9:30 p.m.</u>		
Loews: Regency Ballroom A	In Vivo Working Group	Working Group on Aging and the		Working Group
1	Room 204AB	Human Skeleton		Room 203AB
*ISCD courses require separate		Room 108B		
fee and registration	7:00 pm - 9:00 pm			7:00 p.m. – 9:45 p.m.
	<u>7:00 pm – 9:00 pm</u>			Biochemical Markers of Bone
1	Working Group on Musculoskeletal	<u>7:00 p.m. – 10:00 p.m.</u>		
1	Rehabilitation in Patients with	Pediatric Bone and Mineral Working		Turnover Working Group
1	Osteoporosis	Group		Room 204AB
1	Room 108B	Room 103A		
1				6:30 pm -10:00 pm
1	<b></b>			Adult Bone and Mineral Working
	<u>7:15 p.m. – 9:30 p.m.</u>			0
	Working Group on Hormone-Receptor			Group
	Interactions			Room 103A
	Room 204C			
	100112040			
Thursday, September 14				
THE INTERNATIONAL SOCIETY				
	INDUSTRY-SUPPORTED	INDUSTRY-SUPPORTED	40DMD	INDUSTRY-SUPPORTED
FOR CLINICAL DENSITOMETRY	SYMPOSIA (ISS)	SYMPOSIA (ISS)	ASBMR	SYMPOSIA (ISS)
(ISCD)				
	7:00 p.m. – 9:30 p.m.	7:00 p.m. – 10:00 p.m.	8:00 p.m 12:00 a.m.	7:00 p.m. – 9:30 p.m.
<u>7:30 a.m. – 11:15 a.m.</u>	7:00 p.m. – 9:30 p.m. Osteoporosis: Limitations of	<u>7:00 p.m. – 10:00 p.m.</u> Modern Advances in	8:00 p.m 12:00 a.m. ASBMR Social Event	7:00 p.m. – 9:30 p.m. Seeds of a Revolution: Progress
<u>7:30 a.m. – 11:15 a.m.</u> ISCD Bone Densitometry Clinician	Osteoporosis: Limitations of	Modern Advances in	ASBMR Social Event	Seeds of a Revolution: Progress
7:30 a.m. – 11:15 a.m. ISCD Bone Densitometry Clinician Course	Osteoporosis: Limitations of Diagnostic Criteria and Controversies	Modern Advances in the Understanding of	ASBMR Social Event Supported in part by NPS	Seeds of a Revolution: Progress on Reinventing the
<u>7:30 a.m. – 11:15 a.m.</u> ISCD Bone Densitometry Clinician	Osteoporosis: Limitations of	Modern Advances in	ASBMR Social Event Supported in part by NPS Pharmaceuticals	Seeds of a Revolution: Progress
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<u>7:30 a.m. – 11:15 a.m.</u> ISCD Bone Densitometry Clinician Course <i>Loews: Regency Ballroom A</i>	Osteoporosis: Limitations of Diagnostic Criteria and Controversies in Conventional Treatment Sponsored by the Johns Hopkins	Modern Advances in the Understanding of Bone Structure	ASBMR Social Event Supported in part by NPS Pharmaceuticals The Franklin Institute	Seeds of a Revolution: Progress on Reinventing the Management of Metabolic Bone Disease
7:30 a.m. – 11:15 a.m. ISCD Bone Densitometry Clinician Course Loews: Regency Ballroom A 7:30 a.m. – 11:30 a.m.	Osteoporosis: Limitations of Diagnostic Criteria and Controversies in Conventional Treatment Sponsored by the Johns Hopkins University School of Medicine	Modern Advances in the Understanding of Bone Structure Jointly sponsored by Postgraduate Institute for Medicine and Fission	ASBMR Social Event Supported in part by NPS Pharmaceuticals The Franklin Institute 222 North 20th Street	Seeds of a Revolution: Progress on Reinventing the Management of Metabolic Bone Disease Sponsored by Medical
7:30 a.m. – 11:15 a.m. ISCD Bone Densitometry Clinician Course Loews: Regency Ballroom A 7:30 a.m. – 11:30 a.m. ISCD Bone Densitometry	Osteoporosis: Limitations of Diagnostic Criteria and Controversies in Conventional Treatment Sponsored by the Johns Hopkins University School of Medicine Supported by an educational grant	Modern Advances in the Understanding of Bone Structure Jointly sponsored by Postgraduate Institute for Medicine and Fission Communications	ASBMR Social Event Supported in part by NPS Pharmaceuticals The Franklin Institute 222 North 20th Street Philadelphia, PA 19103	Seeds of a Revolution: Progress on Reinventing the Management of Metabolic Bone Disease Sponsored by Medical Education Resources, Inc.
7:30 a.m. – 11:15 a.m. ISCD Bone Densitometry Clinician Course Loews: Regency Ballroom A 7:30 a.m. – 11:30 a.m. ISCD Bone Densitometry Technologist Course	Osteoporosis: Limitations of Diagnostic Criteria and Controversies in Conventional Treatment Sponsored by the Johns Hopkins University School of Medicine Supported by an educational grant from GlaxoSmithKline and Roche	Modern Advances in the Understanding of Bone Structure Jointly sponsored by Postgraduate Institute for Medicine and Fission Communications Supported by an educational grant	ASBMR Social Event Supported in part by NPS Pharmaceuticals The Franklin Institute 222 North 20th Street Philadelphia, PA 19103 Shuttle buses will be provided to and	Seeds of a Revolution: Progress on Reinventing the Management of Metabolic Bone Disease Sponsored by Medical Education Resources, Inc. Supported by an educational
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7:30 a.m. – 11:15 a.m. ISCD Bone Densitometry Clinician Course Loews: Regency Ballroom A 7:30 a.m. – 11:30 a.m. ISCD Bone Densitometry Technologist Course Loews: Regency Ballroom C1 & C2	Osteoporosis: Limitations of Diagnostic Criteria and Controversies in Conventional Treatment Sponsored by the Johns Hopkins University School of Medicine Supported by an educational grant from GlaxoSmithKline and Roche Laboratories	Modern Advances in the Understanding of Bone Structure Jointly sponsored by Postgraduate Institute for Medicine and Fission Communications Supported by an educational grant from Merck & Company, Inc.	ASBMR Social Event Supported in part by NPS Pharmaceuticals The Franklin Institute 222 North 20th Street Philadelphia, PA 19103 Shuttle buses will be provided to and	Seeds of a Revolution: Progress on Reinventing the Management of Metabolic Bone Disease Sponsored by Medical Education Resources, Inc. Supported by an educational grant from Novartis Pharmaceuticals Corporation
7:30 a.m. – 11:15 a.m. ISCD Bone Densitometry Clinician Course Loews: Regency Ballroom A 7:30 a.m. – 11:30 a.m. ISCD Bone Densitometry Technologist Course Loews: Regency Ballroom C1 & C2 11:45 a.m. – 2:00 p.m.	Osteoporosis: Limitations of Diagnostic Criteria and Controversies in Conventional Treatment Sponsored by the Johns Hopkins University School of Medicine Supported by an educational grant from GlaxoSmithKline and Roche Laboratories Marriott: Grand Ballroom A-F	Modern Advances in the Understanding of Bone Structure Jointly sponsored by Postgraduate Institute for Medicine and Fission Communications Supported by an educational grant from Merck & Company, Inc. Loews: Regency Ballroom	ASBMR Social Event Supported in part by NPS Pharmaceuticals The Franklin Institute 222 North 20th Street Philadelphia, PA 19103 Shuttle buses will be provided to and	Seeds of a Revolution: Progress on Reinventing the Management of Metabolic Bone Disease Sponsored by Medical Education Resources, Inc. Supported by an educational grant from Novartis
7:30 a.m. – 11:15 a.m. ISCD Bone Densitometry Clinician Course <i>Loews: Regency Ballroom A</i> 7:30 a.m. – 11:30 a.m. ISCD Bone Densitometry Technologist Course <i>Loews: Regency Ballroom C1 &amp; C2</i> 11:45 a.m. – 2:00 p.m. ISCD Bone Densitometry Clinician	Osteoporosis: Limitations of Diagnostic Criteria and Controversies in Conventional Treatment Sponsored by the Johns Hopkins University School of Medicine Supported by an educational grant from GlaxoSmithKline and Roche Laboratories <i>Marriott: Grand Ballroom A-F</i> <u>7:00 p.m. – 9:00 p.m.</u>	Modern Advances in the Understanding of Bone Structure Jointly sponsored by Postgraduate Institute for Medicine and Fission Communications Supported by an educational grant from Merck & Company, Inc. <i>Loews: Regency Ballroom</i> <b>7:00 p.m. – 10:00 p.m.</b>	ASBMR Social Event Supported in part by NPS Pharmaceuticals The Franklin Institute 222 North 20th Street Philadelphia, PA 19103 Shuttle buses will be provided to and from the official ASBMR hotels	Seeds of a Revolution: Progress on Reinventing the Management of Metabolic Bone Disease Sponsored by Medical Education Resources, Inc. Supported by an educational grant from Novartis Pharmaceuticals Corporation
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Please note that the International Society for Clinical Densitometry (ISCD) Courses, the Industry-Supported Symposia (ISS), and the Working Groups are not part of the ASBMR Official Scientific Program. These meetings are held in conjunction with the ASBMR Annual Meeting. The Sponsor/Organizer of each meeting is responsible for the organization and scientific content of the educational activity. For the ISS, ACCME-accreditation is required and the programs must be in accordance with the Essential Areas and Policies of the ACCME as well as with FDA guidelines. However, ASBMR expects that all authors and presenters affiliated with the ASBMR 28th Annual Meeting and the 2006 Ancillary Program will provide informative and fully accurate content that reflects the highest level of scientific rigor and integrity. Please note the following definitions: "Supporter" refers to the supporting company

## **2006 SUPPORTERS**

The ASBMR gratefully acknowledges the following companies for their support:

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## 2006 ABSTRACTS BOOK

Supported by an educational grant from the Alliance for Better Bone Health (Procter & Gamble Pharmaceuticals and sanofi-aventis U.S.)

This 2006 Abstracts book is distributed on-site at the Annual Meeting to all ASBMR members and non-member attendees. Nonmember subscribers to *JBMR* will receive the 2006 Abstracts book by mail. ASBMR members who do not attend the Annual Meeting will receive their copy of the 2006 Abstracts book by mail following the meeting. The entire ASBMR Scientific Program (invited speaker sessions, lectures, and abstract-based oral and poster presentation information), as well as the 2006 Ancillary Program (Working Groups and Industry-Supported Symposia), are included in full detail in the On-Site Program book and on the ASBMR website at www.asbmr.org. We encourage you to make use of the 2006 Abstracts On-line that is accessible via the ASBMR website at www.asbmr.org. A complimentary hard copy of the 2006 Abstracts book in PDF format will be available for download for all ASBMR members and pre-registered attendees via the ASBMR website as well.

## ASBMR ABSTRACTS ONLINE

Supported by an educational grant from Roche Laboratories Inc. and GlaxoSmithKline

The Abstracts Online program, which is accessible through the ASBMR website at www.asbmr.org, is an Internet-based search tool. The program allows the creation of a personalized itinerary for the ASBMR 28<sup>th</sup> Annual Meeting program and allows customized searches of abstracts.

## ABSTRACTS-ON-CD-ROM

Supported by an educational grant from the Alliance for Better Bone Health (Procter & Gamble Pharmaceuticals and sanofi-aventis U.S.)

The Abstracts on CD-ROM is also a search tool which allows customized searches of the ASBMR abstracts. The CD-ROM will be included in the ASBMR Annual Meeting delegate bags.

## AWARD PRESENTATIONS

The following ASBMR Awards will be presented immediately before the morning Plenary Symposia and Plenary Lectures in Ballroom B of the Pennsylvania Convention Center — the ASBMR Gideon A. Rodan Excellence in Mentorship Award, the Fuller Albright Award, the Louis V. Avioli Founders Award, the Frederic C. Bartter Award, the William F. Neuman Award, and the Shirley Hohl Service Award. Please refer to the schedule found in the inside cover of this book for award presentation times.

The International Bone and Mineral Society (IBMS) will also be presenting an award — the Sevgi and Gideon Rodan IBMS Fellowship — just prior to the Friday morning ASBMR-IBMS Joint Symposia on Fat and Bone in Ballroom B.

## ASBMR VIRTUAL EXHIBIT HALL

The ASBMR Virtual Exhibit Hall (www.asbmrexhibits.com) showcases Exhibitors and their products, many of which are present at this year's ASBMR 28<sup>th</sup> Annual Meeting. Visitors to the ASBMR Virtual Exhibit Hall are able to learn more about an Exhibitor's products and services, easily contact them for further information, and enjoy an Exhibit Hall experience at their leisure year-round.

## **CYBER CAFÉ**

## Supported by Amgen, Inc.

The Cyber Café, located in the Exhibit Hall, has full Internet capability and enables attendees to search the Internet and check their email. The Cyber Café will be open during published Poster Hall hours.

## **NIH LOUNGE**

If you are looking for another opportunity to ask U.S. National Institutes of Health and Center for Scientific Review staff about your grant proposal or idea, please plan to visit the Meet-the-NIH Lounge in Room 101A of the Pennsylvania Convention Center and get your questions answered. Program staff from the National Institute and Musculoskeletal and Skin Diseases (NIAMS), the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), the National Cancer Institute (NCI), the National Institute of Dental and Craniofacial Research (NIDCR), National Institute on Aging (NIA), Center for Scientific Review (CSR), National Institute of Child Health and Human Development (NICHD), and more will be on-hand, by appointment, to meet with you. Be sure to sign up for open time slots on-site.

# ronate sodium tablets) Gee full Prescribing Information before prescribing ACTONEL I **USAGE**

#### Osteoporosis:

d for the treatment and prevention of osteoporosis in postmenopausal women

### oporasis;

women with osteoporosis. ACTONEL increases BMD and reduces the incidence of watelival proposite endpoint of "ionivertebral osteoporosis-related fractures. Osteoporosis may be seence or history of osteoporotic fracture, or by the finding of low bone mass ifor example, at e premenopausal mean

**teoporosis:** Insidered in postmenopausal women who are at risk of developing osteopurosis and for whom butcome is to maintain bone mass and to reduce the risk of fracture

mily history of osteoporosis, previous fracture, sminking, BMD (at least 1 SD below the ing many a concorrect provide an inclusion and the second and the second and the second and the second and the increased risk of oeveloping osteoporosis and fractures. The presence of these risk factors hen considering the use of ACTONEL for prevention of osteoporosis.

#### duced Osteoporosis:

ed for the prevention and treatment of glucocorticoid-induced osteoporosis in men and ier initiating or continuing systemic glucocorticoid treatment (daily dosage equivalent to 7.5 drisone) for chronic diseases. Patients treated with glucocorticoids should (eceive adequate and vitamin D

#### NS

## e PRECAUTIONS, General

itivity to any component of this product or sit upright for at least 30 minutes

y cause upper gastrointestinal disorders such as dysphagia, esophagitis, and esophageal or IECAUTIONS.

her disturbances of bone and mineral metabolism should be effectively treated before starting deguate trake of calcium and witam 0.5 singortant in all patients, especially in patients in whom bone turnoer is significantly devated. ACTONEL is not recommended for use in renal importment icreatione clearance <30 mL/mile;

we been associated with gastroniceston learning. We been associated with gastroniceston learning, cidens. This association has been reported to hisphosphonatos in postmarketing experience, and in most pre-aproval citinas. This including toose conducted with ACTONEL. Patentia had taking the metication according to the instructions is important to minimize the risk of hauli take ACTONEL with sufficient pair water (6) to 8 ozi to facilitate delivery to the stomach, with rol 32 minutes after taking the cauge.

patients indextraining proceduries such as tooth extraction, but some have occurred in inopausa ostecoorosis or other diagnoses. Most reported cases have been in patients freated is intravennusly out some have been in patients treated orally.

g denta procedures, there are no data available to suggest whether discontinuation of thert, prior to the procedure, reduces the nsk of osteonecrosis of the jaw. Clencal judgment nagement plan of each patient based on individual benefit/risk assessment.

#### Pain:

periance, there have been infrequent reports of severe and occasionally incapacitating bone, pain in patients taking bisphosphonalas (see **ADVERSE REACTIONS**). The time to onset of im one cay to severa - months after starting the drug. Must patients had relief of symptoms cation. A subset had recurrence of symptoms when rechailenged with the same drug or who

## duced Osteoporosis:

benefit of ACTONEL for the prevention and treatment of glucocorticoid-induced / doese of glucocortrolocies <7.5 mg of predniepne or equivalent has not been established, timent, the promonal status of both mer and women should be ascertained and appropriate red.

NEL for this indication has been established in studies of 1-year duration. The officacy of year has not been studied.

#### atients:

e informed to pay particular attention to the opening instructions as clinical benefits may be use to take the drug according to instructions. Specifically ACTONEL should be taken at least he first food or drink of the day other than water

to the stomach, and thus reduce the potential for escohageal initiation, patients should take in uppigt position: string or standing with a hull gass of alain water (6 to 8 o.). Patients for 30 minutes are taking the medication isse **PRECAUTIONS, General**). Patients should the tablet because of a potential for orophary-geal initiation.

and many contracts of a point of the operating generating generating and the second seco

istructed that I they miss a dose of ACTONEL 35-mg once a week, they should take 1 tablet they remember and return to taxing 1 tablet once a week, as unignally scheduled on their s should not take 2 tablets on the same day

we supplemental calcium and vitamin 0 if detary intake is inadequate (see **PRECAUTIONS,** supplements) or calcium allwinum... and magnesium containing medications may interfere of ACTONEL and should be taken at a different time of the day, as with tood

the structure and second second and a landsecond second and any second sec

struct their patients to read the Patient Information before starting therapy with ACTONEL 5 re-read if each time the prescription is reviewed

reminded to give all of their heath care providers an accurate medication history instruct inter heath care providers that they are taking ACTONEL. Patients should be instructed that a medical problem they think may be from ACTONEL, they should talk to their doctor.

ug interaction studies were performed. Risedronate is not metabolized and does not induce crosomal drug metabolizing enzymes (Cytochrome P450).

### ants/Antacids:

ACTONEL and calcium, antacids, or oral medications containing divalent cations will interfere of ACTONE

#### ment Therapy:

500 early postmenopausal women has been conducted to date in which treatment with biblic estrogen replacement herapy was compared to estrogen replacement formal and the angle and the strongen replacement herapy alone. rugs was approximately 12 to 18 months and the primary endpoint was change in BMD. If ate, ACTONEL may be used concomitantly with homove replacement therapy.

### idai Anti-Infiammatory Drugs (NSAIDs):

New new minimument of UTUPS (132005); is enrolled in the 2010KE, Phase 3 softeportes studies, aspinn use was reputed by 31% whom were rog,Jar users 3 or more days per veex. Forty-eight percent of patients rejunded whom were regular users. Among regular appring in XBAD users, the incidence of upper size experiences in ACTONE, these patients (24.5% was similar to that in placebo treadu

### Proton Pump Inhibitors (PPIs):

nts enrolled in the ACTONEL Phase 3 osteoporosis studies, 21% used H. blockers and/or patients, the incidence of upper gastrointestinal adverse experiences in the ACTONEL-treated

## to that in placebo-treated patients. Test Interactions:

e known to interfore with the use of none imaging agents. Specific studies with ACTONEL imad. **Mutagenesis, Impakment of Fertility:** 

indgenicity study rats were administered daily oral doses up to 24 mg/kg/day (approximately mum recommended numan daily noise of 36 mg hased on surface area, mg/m). There were induced turnor findings in male or female rats. The high hose male group of 24 mg/kg/day (in the sudy, Medek S3) due to excesse turxory, and data from this group were not included latation of the study, results in an 80-week carrinogenicity study, mice were administered of 20 mg/kg/day appromrisely 6.4 times the 30-mg/kg human (lose based on surface area, e no significan' drug. Induces turnor findings in male or female nice.

maragenesis. Restornate did not exhibit genetic toxicity in the following assays. In vitro bacterial mutagenesis in Satironella and *F. coli* (Ames assay), mammalian cell mutagenesis in CHO/HGPRT assay, unscheduled DNA synthesis in rat hegiologices and an assessment of chromosottal advertations in vitro in rat home marrow. Readmontate was positive in a chromosomal advertation assay. O HDI cells at highly cytotoxic councertitations (*s*, rive) and *s*, *marchicella setteritations* (*s*, *rive*) and 6% to 7%). When the assay was repeated at doses einibiting appropriate cell survival (29%), there was no availance of thereared attences. evidence of chromosomal damage

#### Impairment of Fertility

Impairment of Fertility: In teniale rate, ovaliation was inhibited at an oral dose of 16 mg/kg/day (approximately 5.2 times the 30 mg/day, human dose based on surface area, mg/m<sup>3</sup>). Decreased implantation was noted in finance rates treated with doses a 7 mg/kg/day (approximately 2.3 times the 30-mg/day human dose based on surface area, mg/m<sup>3</sup>). In male rats: testicular and ephidinyma totingma and imfarmation were noted at 40 mg/kg/day (approximately 1.3 times the 30-mg/day human dose based on surface area, mg/m<sup>3</sup>). Testicular atricity was also noted in male rates area in surface area mg/m<sup>3</sup>). There was moderate to severe spermatif maturation block after 13 weeks in male dogs at area rate area mg/m<sup>3</sup>). There was moderate to severe spermatif maturation block after 13 weeks in male dogs at are rate and sets of a mg/kg/day (approximately 8.1 times the 30-mg/day (human dose based on surface area. mg/m<sup>3</sup>). There was moderate to severe spermatif maturation block after 13 weeks in male dogs at area rate of severe sets and the severe spermatif maturation block after 13 weeks in male dogs at area rate dose of a surface area, mg/m<sup>3</sup>).

#### Pregnancy:

Pregnancy: Pregnancy: Pregnancy: Life mykykyka paproximately 52 brinds the 30-mykky human idse based on surface area, mg/m1, Body weight was decreased in neonates from dams treaked with 80 mg/kg (approximately 26 times the 30-mg/kg/ human dose based on surface area, mg/m1, In rast treaked during gestation with rest the 30-mg/kg/ human dose based on surface area, mg/m1, In rast treaked during gestation the number of fetuses embiliting incomplete ussilication of sternebrae or skull was statistically significantly increased at 71 mg/kg/kg/ tapproximately 23 times the 30-mg/kg/ human dose based on surface area, mg/m1. A low incidence of cleft palate was observed in tetuses time 10-mg/kg/ with real doses a 16 mg/kg/kg/ (approximately 52 times the 30-mg/kg/ human dose based on surface area, mg/m1. A low incidence of cleft palate was observed in tetuses time that classification directs were seen in rabibits treated with or di doses a 25 4CTONEL is unclean. No significant tetal costfication directs were seen in rabibits treated with or di doses area, mg/m1, However, in rabibits treated with 10 mg/kg/kg, 1 of 14 litters were acointed and 1 of 14 litters were deviced permitter/ d prematurely

Similar to other bisphosphorates, treatment during mating and gestation with doses as low as 3.2 mg/kg/dag (approximately 1 time the 30-mg/day human close based on surface area, mg/m ) has resulted in periparturient hypocalcema and mortality in pregnant rats allowed to deliver.

• processions and instance in program in as anyon or owner. Biphosphonese are incorporated into the fuure marks, from which they are gradually released over periods of weeks to years. The amount of biphosphonese incorporation into auth time, and tence, the amount available for release basis more bipsychic structures and the structure marks. The structure biphosphone was the woman becomes pregnant differ completing a course or biphosphonese threads. The impact of variables such as time between creation of bishosphorate thready to course or biphosphonese threads. The impact of variables such as time between creation of bishosphorate thready to course or biphosphonese thready. The impact of variables such as time between creation of bishosphorate thready to course or biphosphonese thready. The impact of variables such as the between creation of bishosphorate thready to course of biphosphorate bishosphorate used, and the nucl of administration unitareemous versus cradie on this risk has not been studied.

There are no adequate and well-controlled studies of ACFONEL in oregnant women. ACTONEL should be used during pregnancy only if the potential benefit justifies the potential risk to the mother and fetus.

#### Nursing Women:

Recorrenate was detected in feeding pupe exposed to lacitating rats for a 24 hour period post-dosing, indicating a small degree of lactoa transfer. It is not known whether relationate is excreted in human milk. Because many drugs are excreted in human milk and bocase of the potential for exercise advects encloses in nursing infants. Fight biotechinates, a decision should be made whether to discontinue nursing or to discontinue the drug taking into account the importance of the drug to the mother.

## Pediatric lise:

Safety and effectiveness in pediatric patients have not been established Geriatric Use:

Of the patients receiving ACTONEL in postmenupausal osteopornsis studies. 47% were between 65 and 75 years of age. and '7% were over 75. The corresponding proportians were 26% and 11% in glucocorricody-induced insteporosis traits and 40% and 26% in Pagets disease traits. No overall differences in efficacy or safety were observed between these patients and younge patients but greater sensitivity disone older individuals cannot be ruled out

#### Use in Men:

Safety and effectiveness have been demonstrated in clinical studies in mer-receiving ACTONEL both for Paget's disease and for treatment and prevention of glucocorticodi-induced osteoporosis. However, the safety and effectiveness in mer for osteoporosis due to other cases have not been established.

#### ADVERSE REACTIONS

ACTONEL has been studied in over 5700 patients enrolled in the Phase 3 glucocorticoid-induced osteoporosis AULTINE this clean studies in over 7/k0 parents entrolled in the Phase 3 glucocontopin induced osteodorosis clinical ratia star in osternenopausia disedencions interval sol up to 3 years duration. The overal adverse event profile of ACIDNE 5 mg in these studies was similar to that of planethor. Mest adverse events were either mild m moderate and dd rol toat load to discontinuation from the study. The incidence of serious adverse events with a withdrew from the study due to adverse events was 14.4%, and 13.5%, for the paceho and ACIDNE 5 mg groups, respectively. Table 1 lists adverse events from the Phase 3 costepoross that reported in 2% of patients and in more ACIDNE1-treated patients than placebo treated patients. Adverse events are shown without attribution of causality

Duridenitis and glossitis have been reported uncommonly (0.1% to 1%). There have been rare reports (<0.1%) of abnormal lifer function tests.

Table 1 Adverse Events Occurring at a Frequency ≥2% and in More ACTONEL-Treated Patients than Placebo-Treated Patients Combined Phase 3 Osteoporosis Trials		
	Placebo %	ACTONEL 5 mg
Body System	(n = 1914)	(n = 1916)
Body as a Whole		
Infection	29.7	29.9
Back Pain	23.6	26.1
Pain Abdominal Pain	13.1	13.6
Abdominal Pain Neck Pain	9.4 4.5	11.6
Asthenia	4.5	5.3
Chest Pain	4.3	5.0
Neoplasm	3.0	3.3
Hemia	2.5	2.9
Cardiovascular		
Hypertension	9.0	10.0
Cardiovascular Disorder	1.7	2.5
Angina Pectoris	2.4	2.5
Digestive		
Nausea	10.7	10.9
Diarrhea Flatulence	9.6	10.6
Gastritis	2.3	2.5
Gastrointestinal Disorder	2.3	2.5
Rectal Disorder	1.9	2.2
Tooth Disorder	2.0	2.1
Hemic and Lymphatic		
Ecchymosis	4.0	4.3
Anemia	1.9	2.4
Musculoskeletal		
Arthralgia	21.1	23.7
Joint Disorder	5.4	6.8
Myalgia Bone Pain	6.3 4.3	6.6 4.6
Bone Disorder	3.2	4.0
Leg Cramps	2.6	3.5
Bursitis	2.9	3.0
Tendon Disorder	2.5	3.0
Nervous	2.0	0.0
Depression	6.2	6.8
Dizziness	5.4	6.4
Insomnia	4.5	4.7
Anxiety	3.0	4.3
Neuralgia	3.5	3.8
Vertigo Hypertonia	3.2	3.3
Paresthesia	1.8	2.1
Respiratory	1.0	
Pharyngitis	5.0	5.8
Rhinitis	5.0	5.7
Dyspnea	3.2	3.8
Pneumonia	2.6	3.1
Skin and Appendages		1
Rash	7.2	7.7
Pruritus	2.2	3.0
Skin Carcinoma	1.8	2.0
Special Senses	5.4	
Cataract Conjunctivitis	5.4	5.9
Otitis Media	2.8	3.1
Urogenital	2.4	2.5
Urinary Tract Infection	9.7	10.9
Cystitis	3.5	4.1

#### Laboratory Test Findings:

Asymptomatic and small decreases were observed in serum calcium and phosphorus decreases of 0.8% in serum calcium and of 7 7% in phosphorus were observed at 6 mm ACTONEL. Throughout the Phase 3 studies, serum calcium levels below 8 mg/dL were ob (0.5%) in each treatment arm (ACTONEL and placebc). Serum phosphorus levels below in 14 patients. 11 (0.6%) freated with ACTONEL and 3 (0.2%) freated with placebo.

#### opic Findings:

Endoscopic Findings: ACTOREL cincal studies enrolled over 5700 patients, many with pre-existing gastr conconitant use of NSAIDs or asprin. Investigators were encouraged to perform endo with moderate-to-severe gastromitsrinal complaints, while maintaining the blind. The librately performed on egual numbers of patients betwene The treated and pached orgound to thinately performance on equal numbers of patients betwene The treated and pached orgound and dividential motions on endoscopy was similar (20% pached), 21% ACTOREL. There withdrew from the studies due to the event pompting endoscopy was similar across treatment groups. There findings on endoscopy were also generally comparative across treatment groups. There reports of mid dividentils in the ACTOREL group. Inverse three were more dovidential uncert Cinically important linkings (perforations ulcers, or theding) among this symptomatic between groups (55 h glabacb). 39% ACTOREL). between groups (51% placebo: 39% ACTONEL).

#### Once-a-week Dosing:

In a 1 year, double-blind, multiceriter study comparing ACTONFL 5-ring daily and AC week in postmenopausal women, the overall safety and tolerability profiles of the 2 were similar. Table 2 last the adverse events in  $\approx 2\%$  of patients from this trial. Even the terms of terms of the terms of terms o attribution of causality.

in the Daily vs. Weekly Osteo Postmenopau	isal Women	уı
	5 mg Daily ACTONEL	ľ
Body System	% (n = 480)	
	(11 - 480)	÷
Body as a Whole Infection	19.0	
Accidental Injury	10.6	
Pain	7.7	
Back Pain	9.2	
Flu Syndrome	7.1	
Abdominal Pain	7.3	
Headache	7.3	
Overdose	6.9	
Asthenia	3.5	
Chest Pain	2.3	
Allergic Reaction	1.9	1
Neoplasm	0.8	
Neck Pain	2.7	1
Cardiovascular System		
Hypertension Syncope	5.8	
Vasodilatation	2.3	
Digestive System	2.3	
Constipation	12.5	
Dyspepsia	6.9	
Nausea	8.5	
Diarrhea	6.3	
Gastroenteritis	3.8	
Flatulence	3.3	
Colitis	0.8	
Gastrointestinal Disorder	1.9	
Vomiting	1.9	
Dry Mouth	2.5	
Metabolic and Nutritional Disorders Peripheral Edema	4.2	
Musculoskeletal System	4.2	
Arthralgia	11.5	
Traumatic Bone Fracture	5.0	
Myalgia	4.6	
Arthritis	4.8	L
Bursitis	1.3	
Bone Pain	2.9	
Nervous System		L
Dizziness	5.8	
Anxiety	0.6	
Depression	2.3	L
Vertigo	2.1	
Respiratory System		L
Bronchitis Sinusitis	2.3	L
Pharyngitis	4.6	L
Cough Increased	3.1	
Pneumonia	0.8	1
Rhinitis	2.3	
Skin and Appendages	2.5	
Rash	3.1	L
Pruritus	1.9	Ľ
Special Senses		1
Cataract	2.9	Ľ
Urogenital System		L
Urinary Tract Infection	2.9	1

#### Post-marketing Experience:

Very rare hypersensitivity and skin reactions have been reported, including ang rash and bullous skin reactions, some severo.

Musculoskeletat: bone, joint or muscle pain, rarely described as severe o PRECAUTIONS, Musculoskeletal Pain).

#### OVERDOSAGE

Decreases in serum calcium and phosphorus tollowing substantial overdose may patients. Signs and symptoms of hypocalcemia may also occur in some of th antacids containing calcium should be given to bind ACTONEL and reduce abso

anacto containing tancianin should be given to bind vectoriza, and refuce actor in cases of substantial overrides, gastric lavage may be considered to remo Standard procedures that are effective for treating hypocalcemia, including calcium intravenously, would be expected to restore physiologic amounts of io reflexe signs and symptoms of hypocalcemia.

Lethality after single oral doses was seen in female rats at 903 mg/kg and male The minimum lethal dose in mice and rabbits was 4000 mg/kg and 1000 r represent 320 to 620 times the 30-mg human dose based on surface area (mg

#### DOSAGE AND ADMINISTRATION

ACTIVEL should be taken at least 30 minutes before the first food or thrik of the to facilitate delivery to the stomach. ACTOVEL should be swalkowed while the p position and with a full dass of plan water (6 to 6 o.). Patients should not lie after taking the medication (see **PRECAUTIONS, General**).

Patents should nee inequation (see "Record news, cerearily and a should be also be added by the second seco the elderly.

Treatment and Prevention of Pos (see INDICATIONS AND USAGE):

## The recommended regimen is: • one 35-mg tablet oraily, taken once a week

Ð

# one 5-mg tablet orally, taken daily Treatment and Prevention of Glucocorticoid-induced Osteoporosis (see INDICATIONS AND USAGE):

The recommended regimen is · one 5-mg tablet orally, taken daily

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JANUARY 2006

ational Osternoroose Foundarion. Fast Fasts Ava abe at: www/nof org/osteworrosis/liseasit/l

For more information on Actonel visit us at booth #10105

# Because 55% of osteoporotic fractures don't occur at the spine'

# Actonel offers fracture protection across the body:

- Actonel is the only therapy with proven vertebral fracture protection in just 1 year.<sup>2,3,4\*</sup>
- Actonel has proven nonvertebral fracture protection over 3 years.<sup>2,4\*\*</sup>

Nonvertebral fracture reduction based on a composite endpoint of the following sites: wrist, clavicle, humerus, leg, pelvis, and hip.



p=0.001 vs control. Two 3 year studies in 3684 postmenopausal women. All patients received 1000 mg/d calcium, and, some patients received up to 500 IU/d vitamin D. Vertebral fractures were confirmed radiographically; some were associated with symptoms.

\*\*p=0.02 vs control. Three year study in 2458 postmenopausal women. All patients recieved 1000 mg/d calcium, and, some patients received up to 500 IU/d vitamin D. Nonvertebral fractures were reported as adverse events and all confirmed radiographically.

Please see brief summary of prescribing information for Actonel on reverse side.

Actonel is indicated for the treatment and prevention of osteoporosis in postmenopausal women.

## Selected safety information for Actonel

In clinical trials, Actonel was generally well tolerated. Actonel is contraindicated in patients with hypocalcemia, known hypersensitivity to any component of this product, or inability to stand or sit upright for at least 30 minutes. Hypocalcemia and other disturbances of bone and mineral metabolism should be effectively treated before starting Actonel therapy. Actonel is not recommended for use in patients with severe renal impairment (creatinine clearance <30 mL/min).

Bisphosphonates may cause upper gastrointestinal disorders such as dysphagia, esophagitis, and esophageal or gastric ulcer. Patients should pay particular attentior to the dosing instructions, as failure to take the drug according to instructions may compromise clinical benefits and may increase the risk of adverse events.

Among patients treated with bisphosphonates, there have been infrequent reports of severe and occasionally incapacitating bone, joint and/or muscle pain. Rare occurrences of osteonecrosis, primarily of the Jaw (ONJ), have been reported in patients receiving bisphosphonates. Most ONJ cases have occurred in cancer patients undergoing dental procedures. In the majority of cases reported, patients had received intravenous bisphosphonate therapy.

In clinical trials, the overall incidence of adverse events with Actonel 5 mg daily was comparable to placebo. The most commonly reported adverse events regardless of causality were infection (primarily upper respiratory, placebo 29.7% vs. Actonel 5 mg 29.9%), back pain (23.6% vs 26.1%), and arthralgia (21.1% vs 23.7%).

In a one-year clinical trial comparing Actonel 35 mg Once-a-Week and Actonel 5 mg daily, the overall incidence of adverse events with the 2 dosing regimens was similar. The most commonly reported adverse events regardless of causality were infection (Actonel 35 mg 20.6% vs Actonel 5 mg 19.0%), arthralgia (14.2% vs 11.5%), and constipation (12.2% vs 12.5%).

