

# Curriculum vitae

## Prof. Dr. med. Dieter Felsenberg

Free University and Humboldt University Berlin

Charité – University Medicine Berlin

Campus Benjamin Franklin

University Ambulance of Osteology/Orthopedics and Muscle

Center of Muscle and Bone Research

Hindenburgdamm 30, 12203 Berlin, Germany

- 1968-71 : Pre-study practice as a pharmacist
- 1971-1977 : Study of medicine in Erlangen and Berlin
- 11/1977 : Staatsexamen
- 1978-1986 : Radiological specialisation, University Hospital Benjamin Franklin
- 1981 : Doctor's degree
- since 1986 : Senior physician in the Radiological Depart. at the University Hospital
- 1988 : Foundation of Osteoporosis Research Group
- 2/94 : Habilitation in radiology, Faculty of Medicine, Freie Universitaet Berlin
- 1/96 : Fusion of the Osteoporosis and Rheumatology Research Groups
- 7/97 : Foundation of the German Academy for Osteology and Rheumatology
- 4/2000 : Inauguration to 'Außerplanmaessige Professur'
- 9/2000 : Co-founder of the 'Centre for Space Medicine – Berlin', Charite-CBF
- 1/2001 : Foundation of Centre of Muscle and Bone Research at Charité – CBF
- 1/2001 : Implementation of a specific ambulance for patients with muscle and bone diseases, focused on osteoporosis, rare bone diseases and sarcopenia/muscle atrophy at University Hospital, Campus Benjamin Franklin.
- 8/2004 : Foundation of German Society of Muscle and Bone Research
- 12/2004 : Implementation of the German Register 'Osteonecrosis of the Jaw'.
- 04/2011 : Honorary Professor of Medicine in the School of Science, Technology and Health, at the University Campus Suffolk, UK.

### Main Scientific Themes:

Osteoporosis, bone and muscle metabolism, bone biomechanics, diagnostics of bone metastases, sport medicine, rheumatoid arthritis, rare Osteological diseases, micro-CT technology, muscle and bone metabolism in weightlessness, principles of effective muscle training.

### I. Basic Scientific Research:

1. Examinations of bone metabolism in molecular biology – determination of the fragments of osteocalcin in the serum (co-operation with the German Institute of Nutritional Sciences, Potsdam).
2. Genetic examinations of vitamin D receptor-alleles in osteoporotic and healthy persons (co-operation with the Humboldt –University, Charité)
3. Examinations of bone architecture and strength (multi-disciplinary and multi-centric co-operative study of the European Community).
4. Analysis of the trabecular structure of the bone (co-operation with the Institute of Theoretical Physics, University Potsdam and the Nijmegen University, sponsorship by the industry).
5. Muscle and bone interactions in weightlessness – fundamental physiological research
6. Muscle and bone metabolism in weightlessness (multiple projects with the European Space Agency (ESA) and the DLR (German Agency for Space Research), co-operation with centres in the Netherlands, France, Canada, Australia, UK, and Italy.

## **II. Development of Methods:**

1. High resolution CT-examination to assess the volume of the femoral neck and the vertebrae. Assessment of density, architecture and geometry of the bone.
2. Morphometric analysis of vertebral shape in x-rays – an advanced DXA method.
3. Automatic and differential diagnosis of deformities of the vertebrae in x-rays.
4. Development and use of a  $\mu$ CT device performing an ultra-high resolution of the trabecular bone (sponsorship through the University Hospital, Free University Berlin and co-operation with the Institute of Medical Physics of the University Erlangen).
5. Vibration exercise in bed rest.

## **III. Clinical Studies (thematically summarised):**

1. Prevention of post-menopausal osteoporosis (various studies for hormone peroral or transdermal replacement therapies).
2. Therapy of post-menopausal osteoporosis (multiple studies for the therapy with bisphosphonates, Strontium-Ranelate, Raloxifen and hormones).
3. Epidemiology of vertebral osteoporosis in Europe and Germany (Prevalence study – EVOS – European Vertebral Osteoporosis Study).
4. Epidemiology of vertebral osteoporosis in Europe and Germany (Incidence study – EPOS – European Prospective Osteoporosis Study).
5. Homeopathic therapy of osteoporosis (Eden-Carstens Foundation).
6. Examinations of the bone in children by means of the ultrasound – mucoviscidosis study.
7. Pre-screening examination of the finger for the risk determination of osteoporosis by means of the ultrasound.
8. Reference values for the quantitative ultrasound examination in children and adolescents.
9. Osteoporosis and rheumatoid arthritis.
10. Muscle and bone strength and function – therapy of osteopenia.
11. Reference values body composition, muscle function, BMD
12. Treatment of osteoporotic/osteopenic postmenopausal women with bisphosphonates and analysis of bone structure (IIT).
13. Treatment of osteoporotic/osteopenic postmenopausal women with strontium ranelate and analysis of bone structure.
14. Treatment of osteoporotic/osteopenic postmenopausal women with alfacalcidol and analysis of bone structure (IIT).
15. Sequential treatment of osteoporotic postmenopausal women with 1-84 PTH and BP and analysis of BMD.
16. Treatment of osteoporotic/osteopenic postmenopausal women with strontium ranelate and analysis of bone strength.
17. Fracture healing and Strontium ranelate.
18. Fracture healing and anti-sclerostin
19. Sequence therapy – SrR after bisphosphonate treatment

## **Examinations in Sports Medicine:**

1. MRI examinations of the knee cartilage in adolescent high-performance athletes. Prevalence and long-term observation.
2. Bone strength index in weight lifting athletes and body builders.
3. Deformities of the vertebrae in female gymnastics athletes.
4. Specific training of dynamic muscles (fibres of type II) in athletes of various sport disciplines and its influence on bone strength.
5. Muscle capacity and BMD in master athletes. Several studies.

**Membership in scientific organisations:**

1. Member of the Berlin-Brandenburg Radiological Society.
2. Member of the German Radiological Society.
3. Member of the Radiological Society of North America (RSNA).
4. Member of the American Society of Bone and Mineral Research (ASBMR).
5. Member of the European Society of Musculo-Skeletal Radiology.
6. Member of the European Calcified Tissue Society
7. Member of the Scientific Advisory Board of the International Osteoporosis Foundation (IOF).
8. President of the German Society of Muscle and Bone Research.
9. President of the 'International Society of Musculoskeletal and Neuronal Interactions'.
10. Honorary Professor of Medicine in the School of Science, Technology and Health, at the University Campus Suffolk, UK.

Principal Investigator in many international interventional studies.  
Relevant GCP-Trainings: Various investigators meetings 2001-2013  
2010 – Chair of 'Rezertifizierungskurs' DVO, Berlin

Reviewer of about 15 different scientific journals including NEJM.

Member of different advisory boards.

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Prof. Dr. med. Dieter Felsenberg