Molecular Medicine

The Molecular Medicine center is divided into the following divisions:

• Molecular Tumor Research
• Molecular Genetics

Research at the Molecular Medicine center focuses on the mechanisms of carcinogenesis and early diagnosis of work-related cancer. This also includes the investigation of synergistic interactions of different carcinogens in settings of mixed exposure. A number of tools have been established and are continuously refined to detect changes in the genome and epigenome that are connected to the impact of hazardous substances and the development of cancer and other occupational diseases. Cutting-edge analysis methods are employed in order to identify specific patterns in gene expression and new biomarkers for early detection. Together with the Medicine, Allergy/Immunology and Epidemiology centers of competence, interdisciplinary approaches are pursued to validate promising new molecular markers for early detection of cancer in prospective cohort studies. A further research focus is to study the relationship between sequence variations in the genes of enzymes, which metabolize xenobiotic substances, and into the susceptibility to occupational hazardous substances.

Epidemiology

The Epidemiology center is divided into the following divisions:

• Epidemiology
• Statistics
• Epidemiological Advice

The research at the Epidemiology center emphasizes molecular epidemiology for the evaluation of the carcinogenicity of hazardous substances and for the early detection of diseases, as well as traditional epidemiology. Statistical methods are employed to investigate the health effects of known or suspected occupational carcinogens. The investigation of the shape of dose-response curves, the interaction between hazardous substances, and the control of potential confounders are major tasks of statistical modeling. Mixed exposures are of particular interest.

The center cooperates with the other centers of competence of the institute in planning and conducting of studies according to Good Epidemiological Practice and performs the statistical data analysis. This includes building up databases for data entry and analysis of complex study designs.

The Epidemiology center of competence supports the German Social Accident Insurance and its members, and also various other bodies, in evaluating the effects of hazardous substances upon health.

How to reach the Institute

Our institute is located in the south-west of Bochum, on the grounds of the clinic "Bergmannsheil".

By plane:
• Düsseldorf - International Airport (DUS)
• Frankfurt/Main - International Airport (FRA)

From these airports train-connections lead to Bochum Central Station directly.

By public transport:
• Take tram no. 308/318 from Bochum Central station, direction Hattingen/Dahlhausen and get off at "Bergmannsheil"

By car:
• Motorway A 43/44 Exit "Bochum-Querenburg" to "Zentrum"
• Motorway A 40 exit "Bochum-Stahlhausen" to "Zentrum"

There are road signs directing you to "BO-Zentrum" and "Bergmannsheil".

You can use the parking facilities at Bergmannsheil.

Contact:
IPA
Bürkle-de-la-Camp-Platz 1
D-44789 Bochum, Germany
Telephone: +49 234 302-4501
Telefax: +49 234 302-4505
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IPA Institut für Prävention und Arbeitsmedizin der Deutschen Gesetzlichen Unfallversicherung
Institut der Ruhr-Universität Bochum

— Research — Teaching — Advice —
...for the health protection of 70 million insured persons
The Institute

The research institute for prevention and occupational medicine is a facility of the German Social Accident Insurance (DGUV) focused on the research for health protection at the workplace and in educational institutions. Complex occupational questions are answered in an interdisciplinary concept of five centers of competence:

- Medicine
- Toxicology
- Allergology/Immunology
- Molecular Medicine
- Epidemiology

The IPA supports various areas: It gives advice to the statutory accident insurance and their members – concerning occupational medicine questions. Further accident insurance and prevention and the public sector accident insurance and their members – the institutes for statutory accident insurance Institution for the raw materials and chemistry is the facility of the German Social Accident Insurance and the German Social Accident Prevention and Occupational Medicine.

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