University of the Basque Country

biocrues bizkaia
osasun ikerketa institutua
instituto de investigación sanitaria
HEALTH IS ONE OF THE MOST VALUABLE ASSETS IN OUR SOCIETY.
Health is one of the most valuable assets in our society. The undertaking of biomedical research is one of the fields able to contribute the most to the identification of new diagnoses, treatments and prevention systems, enabling us to improve health systems, and as a result, people’s health.

Biocruces Bizkaia, as a top-level scientific structure in the province of Biscay, is a cornerstone of the Basque Government’s strategy to consolidate the Biomedical Sector in the Basque Country, seeking to improve the health and life expectancy of the population.

In this regard, improving health innovation and research with a clear translational research vision is the main focus of the institutions that are part of Biocruces Bizkaia, namely, the Basque Department of Health, the Basque Health Service (Osakidetza), the University of the Basque Country (UPV/EHU), the Basque Foundation for Health Research and Innovation (BIOEF) and the BBK Banking Foundation, together forming the largest health research institute in the Basque Country.

With a long research track record, Biocruces Bizkaia brings together a team of more than 1,300 people, many of whom are clinical researchers in health organisations across Biscay, including Cruces University Hospital (from the Ezkerralde Enkarterri Integrated Healthcare Organisation, IHO), Basurto University Hospital (Bilbao Basurto IHO), Galdakao Hospital (Barrualde Galdakao IHO), Górliz Hospital, and the Basque Centre for Transfusions and Human Tissues, up to a total of more than 10 healthcare organisations. Some academic researchers at the UPV/EHU are members of Biocruces Bizkaia and the institute also has its own researchers.

Biocruces Bizkaia is a Health Research Institute accredited in accordance with the criteria of the Carlos III Health Institute. It has been awarded the right to use the European Union HR Excellence in Research icon for its human resources policies by the European Commission and is committed to equality, the principles of Responsible Research and Innovation (RRI) and the Sustainable Development Goals (SDGs).
MISSION
AND VISION
01 MISSION AND VISION

To strengthen translational research and healthcare innovation, to create value and make a positive impact on health for society:

+ Promoting collaboration between clinical and basic research
+ Serving as a meeting point between the health system, industry and the scientific and technological knowledge ecosystem
+ Ensuring sustainability of health research and innovation

We would like to build a reputation as a translational healthcare research and innovation centre of prestige regionally and nationwide, leading high-impact international projects, and serving as a recruitment hub for clinical, research and innovation talent.
The 2018-2022 Strategic Plan is aligned with the 2020 Research and Innovation Strategy of the Basque Department of Health, the Basque Research and Innovation Strategy for Smart Specialisation (RIS3) and 2020 Science, Technology and Innovation Plan, and the Strategy Action in Health of the Carlos III Health Institute, as well as the EU 2020 Strategy.

**01 MISIÓN Y VISION**

**RESEARCH AND INNOVATION**
This refers to all our activities focused on promoting and fostering collaboration between different research groups and profiles, and translating research to clinical practice.

**TALENT**
This involves all the measures related to the management of research talent taken by Biocruces Bizkaia Health Research Institute and the promotion and recognition of research in healthcare and educational spheres.

**ALLIANCES AND INTERNATIONALISATION**
This refers to all the measures undertaken for promoting collaboration between the institute and the healthcare and research ecosystem, and for improving its standing internationally.

**MANAGEMENT AND INTEGRATION**
This axis is composed of a set of initiatives focused on improving coordination between the various activities undertaken within the institute, as well as optimising the management of physical and economic resources.

1.313 PEOPLE
65 RESEARCH GROUPS
7 RESEARCH AREAS
02 7 RESEARCH AREAS

1. Primary care, disease prevention and chronic diseases
2. Cancer
3. Endocrinology, metabolism, nutrition and renal disease
4. Autoimmune, inflammatory and infectious diseases
5. Disorders of the nervous system
6. Innovation in surgery, transplantation and health technologies
7. Maternal and child health and assisted reproduction
Primary care focused on the promotion of health and primary, secondary and tertiary prevention of the chronic diseases that are most common and have the greatest impact on health, such as cancer, cardiovascular disease and mental disorders.

The area for Cancer covers all aspects of any type of solid malignant tumours and blood cancers, from their epidemiological to their clinical and biological features. The aim of the different groups is to carry out basic, applied and clinical research.

With clinical, biochemical and molecular/genetic approaches, the different groups in Area 3 with various lines of interest work together on the characterisation of the etiopathogenesis, the epidemiology and the search for new diagnostic and therapeutic strategies, for different chronic diseases, some common and others considered rare, seeking to translate scientific advances to patients.
The goal of our research on maternal and child health and assisted reproduction is to innovate and address the fertility problems of many couples, to improve the health of pregnant women and enhance the safety of mothers and infants during childbirth. The researchers focus their efforts on foetal health and progress in the diagnosis of certain genetic disorders.

The area for autoimmune and infectious diseases has a marked clinical focus. The diseases of interest tend to have an inflammatory basis and an autoimmune, environmental, infectious or metabolic cause and most are chronic conditions.

Neurodegenerative diseases, epilepsy, demyelinating diseases, stroke and other neurological diseases account for a significant proportion of mortality and disability, and have serious social consequences. The groups in this Area focus on the causes of these diseases, their genetic component, the clinical and behavioural profile of patients and their epidemiology.

The area for Innovation in Surgery Transplantation and Health Technologies spans all surgical specialties and many medical areas. Its objective is to carry out high quality research that could serve to improve patient care. The area is designed to facilitate the provision of personalised healthcare, with a focus on basic science, surgical technologies, bioinformatics and computation.
MEMBERS OF THE INSTITUTE
03 MEMBERS OF THE INSTITUTE

SEX DISTRIBUTION

61% ♂

39% ♂

1245 RESEARCHERS
RESEARCHERS PER SCIENTIFIC AREA

- **Area 1**: Primary care, disease prevention and chronic diseases
- **Area 2**: Cancer
- **Area 3**: Endocrinology, metabolism, nutrition and renal disease
- **Area 4**: Autoimmune, inflammatory and infectious diseases
- **Area 5**: Disorders of the nervous system
- **Area 6**: Innovation in surgery, transplantation and health technologies
- **Area 7**: Maternal and child health and assisted reproduction

80% CLINICAL RESEARCHERS

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<th>Category</th>
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SCIENTIFIC PRODUCTION
04 SCIENTIFIC PRODUCTION

877 PUBLICATIONS

CUMULATIVE IMPACT FACTOR
AVERAGE IMPACT FACTOR
Q1
D1

4.037
4.6
421
164

Female institute researcher in lead authorship position
Institute researcher in lead authorship position

Only first author
Only last author
First and last authors
The Biocruces Bizkaia Health Research Institute has a growing presence in innovation and knowledge transfer activities within the H2020 European framework programme. Over the course of 2020, it has been involved in proposals for 49 projects in competitive funding rounds internationally. In this period, 21 international projects have been ongoing, 17 of them funded by the European Commission.
19.5 MILLION SOURCES OF FUNDS RAISED FOR ONGOING PROJECTS

- **International**: 16%
- **Basque**: 54%
- **Spanish**: 30%
- **National**: 16%
In the graphs below are represented bibliometrics indicators: total of publications, Average Impact Factor, Accumulated Impact Factor, and its distribution in the first decile; first and second quartiles.
Number of publications, appointments received and rate citation by scientific area

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04 ONGOING CLINICAL STUDIES

690 CLINICAL RESEARCH STUDIES

ONGOING 7%

STARTED 28%

STARTED 14%

23 COVID-19

16,5 MILLION FUNDS RAISED FOR ONGOING CLINICAL STUDIES

TYPE OF ONGOING CLINICAL STUDY BY AREA

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Areas:
1. Primary care, disease prevention
2. Cancer
3. Endocrinology and metabolism
4. Autoimmune, inflammatory and infectious diseases
5. Disorders of the nervous system
6. Innovation in surgery and health technologies
7. Maternal and child health
The Institute is currently involved in 12 national and 23 international networks. These international collaborations have given rise to 234 publications.

Nationally, it participates in various networks of the Carlos III Research Institute: the Spanish Clinical Research Network (SCReN), the Medical Technology Innovation Network (ITEMAS), the biomedical research networking centers (CIBER), Thematic Networks for Cooperative Research in Health (RETICS), and the Maternal and Child Health and Development Research Network (SAMID). Notably, it is also a member of the 3d4 emergency group (3D printing for healthcare emergencies) and the Spanish National Biobank Network.

At the international level, Biocruces Bizkaia participates in three European Cooperation in Science and Technology (COST) networks, the RECLIP clinical trials network (which in turn is part of Conect4children, a European network facilitating collaboration in the development of paediatric therapies), the REFBIO II trans-Pyrenean cooperation network for biomedical research, the Pediatric Emergency Research Network (PERN) and the EuroNet for Hodgkin’s disease.

The Medtech Initiative, promoted by the Basque President’s Office and the Department of Health, fosters collaboration with the Basque public health system through the health research institutes in the region. Biocruces Bizkaia was created as a key player in this initiative.
FACILITIES AND SUPPORT UNITS
FACILITIES AND SUPPORT UNITS
05 FACILITIES AND SUPPORT UNITS
05 SCIENTIFIC AND TECHNOLOGICAL RESOURCES

FACILITIES FOR NERVOUS SYSTEM AND PHYSICAL EXERCISE TRAINING
A flexible and multidisciplinary space dedicated to motor rehabilitation and improving quality of life.

This facility is equipped with exoskeletons and complete robotics, optics and serious game systems for the conducting research studies and developing new rehabilitation protocols for serious conditions including spinal injury and child cerebral palsy.

3D PRINTING LABORATORY
This facility gives researchers access to instruments that provide more detailed information concerning certain healthcare processes, in particular, in clinical interventions (planning and training), facilitating and improving clinician-patient communication and teaching.

ANIMAL HOUSE AND ANIMAL EXPERIMENT UNIT
With a floor area of over 1000 m², this support facility for biomedical initiatives is fully equipped for designing and conducting research studies and enables the set-up of animal models before research in humans.

CELL CULTURE
This facility is equipped for undertaking research studies using primary cultures as well as established cell lines.

MICROSCOPY
This facility offers a set of microscopy systems (confocal, fluorescence and live-cell imaging) and support in their use, as well as sample preparation, data analysis and experimental design.

FLOW CYTOMETRY
This facility has flow cytometry systems and software for data analysis. It provides services such as simultaneous measurement and analysis of multiple cellular and particle markers. It enables the quantification of cell populations through fluorescence and conjugated antibody methods.
GENOMIC GENETICS
This facility enables the use of both traditional techniques within molecular biology and genomics and innovative equipment and techniques for molecular biology, genetics and genomics.

METABOLOMICS AND PROTEOMICS
This facility provides infrastructure, including for gas chromatography, mass spectrometry, and support for the measurement of identified markers of inborn errors of metabolism and search for new biomarkers, for both diagnosis and prognosis of metabolic disorders and other conditions.

CELL THERAPY CLEANROOMS
This facility assists with the preparation of cell-derived products (advanced therapy, PRP, etc.) for their use in clinical research, meeting the conditions necessary for cleanroom manufacturing. It has Grade A, B, C and D rooms, and Class II biosafety cabinets.

BASQUE BIOBANK
This facility enables the Basque Health system to carry out advanced research in biomedicine and biotechnology, through the management of various types of biological samples.
05 **INNOVATION**

INTELLECTUAL AND INDUSTRIAL PROPERTY RIGHTS

![Diagram showing numbers of framework agreements, specific agreements, innovative ideas and/or R&D results, and new applications.]

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**Portfolio**

![Diagram showing numbers of patents, copyrights, know-how licenses, trademarks, and utility models.]

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KNOWLEDGE DISSEMINATION AND TRAINING ACTIVITIES
06 KNOWLEDGE DISSEMINATION AND TRAINING ACTIVITIES
There are a growing number of events and activities for dissemination and involving the public, patients’ associations, and educational institutions. During 2020, numerous communication and diffusion activities have been carried out:
Funded under the Medtech Initiative of the Basque Government