

Genomics and Personalised Medicine

Duration: 10 Days

Language: en

Course Code: IND5 - 173

Objective

By the end of this course, participants will be able to:

- Understand the basic structure and function of the human genome.
- Explain how genomics influences disease risk and drug response.
- Discuss the role of personalized medicine in improving patient outcomes.
- Analyze case studies where genomics has guided clinical decision-making.
- Identify ethical and legal considerations in using genetic data.
- Apply genomic knowledge in clinical or research settings.

Audience

This course is ideal for:

- Healthcare professionals (physicians, nurses, pharmacists).
- Clinical researchers and medical scientists.
- Public health professionals.
- Students in health sciences or biomedical fields.
- Policy makers in healthcare innovation.

Training Methodology

Participants will learn through instructor-led presentations, interactive videos, and real patient case examples. The course includes short quizzes, discussions on ethical dilemmas, and downloadable genetic report templates and tools to practice data interpretation.

Summary

This course introduces the essential concepts of genomics and how they are shaping the future of personalized healthcare. With the rapid advancement in genetic technologies, healthcare providers and researchers are now able to understand patient differences at the genetic level and tailor treatments accordingly.

Participants will explore how genomic data is used in disease prediction, prevention, and treatment. The course highlights real-world applications in oncology, pharmacogenomics, rare diseases, and more. It aims to bridge the gap between scientific innovation and practical clinical

care.

Course Content & Outline

Section 1: Introduction to Genomics

- Overview of DNA, genes, and the human genome.
- Types of genetic variation (e.g., SNPs, mutations).
- The Human Genome Project and its impact.
- Genomic data in healthcare.

Section 2: Fundamentals of Personalised Medicine

- What is personalised vs. precision medicine?
- Role of genetics in individual variability.
- How genetic data supports treatment choices.
- Real-world examples in chronic and rare diseases.

Section 3: Genomic Technologies and Tools

- Next-generation sequencing (NGS).
- Microarray analysis and gene panels.
- Interpreting genetic test results.
- Bioinformatics basics for clinicians.

Section 4: Pharmacogenomics

- How genetics affects drug metabolism.
- Common gene-drug interactions.
- Personalised prescriptions and dosing.
- Preventing adverse drug reactions.

Section 5: Cancer Genomics and Targeted Therapy

- Understanding cancer at the molecular level.
- Genomic profiling in tumor diagnosis.
- Targeted therapies and immunogenomics.

- Case studies: Breast, lung, and colon cancers.

Section 6: Ethical, Legal & Social Issues

- Informed consent in genetic testing.
- Genetic privacy and data protection.
- Discrimination risks and genetic counseling.
- National and global policy frameworks.

Section 7: Clinical Integration and Future Trends

- How to implement genomic medicine in practice.
- Multidisciplinary team roles in genomics.
- The future of genome editing (e.g., CRISPR).
- Trends in AI and machine learning in genomics.

Certificate Description

Upon successful completion of this training course, delegates will be awarded a Holistique Training Certificate of Completion. For those who attend and complete the online training course, a Holistique Training e-Certificate will be provided.

Holistique Training Certificates are accredited by The CPD Certification Service (CPD), and are certified under ISO 9001 and ISO 29993 standards.

CPD credits for this course are granted by our Certificates and will be reflected on the Holistique Training Certificate of Completion. In accordance with the standards of The CPD Certification Service, one CPD credit is awarded per hour of course attendance. A maximum of 50 CPD credits can be claimed for any single course we currently offer.

Categories

Health, Safety & Environment HSE, Healthcare & Pharmaceutical

Tags

Pharmacogenomics, Personalised Medicine, Genomics

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