YOU CAN'T ALL BE DOCTORS!

Every year a lot of students who apply for Medicine are unsuccessful. They are often very capable students who would have been very successful if they had made a well-researched application for anything else. So here is a selection of other degree courses you could do that are directly or indirectly connected to the medical sciences, healthcare or welfare. *Those marked with an asterisk may attract bursaries.

Adult Nursing*: Managing the care and treatment of adult and elderly patients in hospitals, residential care and the community; nurse practitioners are increasingly taking on some of the responsibilities previously ascribed to doctors such as clinical supervision, prescribing and performing minor surgery.

Mental Health Nursing*: Managing the care and treatment of service users who have mental health conditions either in hospitals or in residential care or community teams and also supporting their carers or families.

Children's Nursing*: Managing the care and treatment of children who, in many cases, will have serious, chronic or life-threatening conditions; also providing support and reassurance for the children's families.

Learning Disabilities Nursing*: Managing the care and treatment of people who, since childhood, have had learning disabilities that impair their intellectual and social functions and cause physical, sensory or mental health problems.

Midwifery*: Supporting women, their partner and families through each stage of pregnancy, labour, delivery and the early stages of post-natal care.

Dental Hygiene and Therapy: Provision of preventative dental treatment and advice on dental health and the carrying out of a range of procedures including oral assessment, scaling and polishing, applying fluoride and fissure sealants, taking radiographs and undertaking basic restorations and therapy treatment.

Physiotherapy*: Using physical means to help patients recover from illness or injury and assisting them in rehabilitation after operations by restoring muscle and other functions. It isn't just about sports injuries - you are more likely to work with the elderly than with elite sports people!

Podiatry*: Assessment and treatment of patients with foot or lower-limb abnormalities, including some specialist surgical procedures; may also work with sports injuries. There are about the same number of podiatrists in UK as there are forensic scientists, but very few students ever say they want to be one!

Speech Sciences/Therapy*: Study of the processes involved in human communication, both normal and abnormal, and the treatment of EDS (eating, drinking and swallowing) and communication disorders in children and older people.

Occupational Therapy*: Advising and supporting people who are experiencing physical, social or psychological difficulties and who need help to achieve the things they want to do in their daily lives or to lead as independent a life as possible.

Radiography*: Working with advanced technological equipment to produce high quality images that assist in diagnosis of illness or injury (Diagnostic Radiography) or to treat people with cancer or non-malignant diseases (Therapeutic Radiography or Radiotherapy).

Optometry: Primary health care specialists trained to examine the eyes to detect defects in vision, signs of injury, ocular diseases or abnormality and general health problems like high blood pressure and diabetes.

Orthoptics*: Diagnosis and treatment of abnormal eye movement such as squints, lazy eye or double vision.

Dietetics*: Applying the science of nutrition to the management and treatment of diet-related illnesses and also contributing to the general care of patients by prescribing suitable dietary solutions.

Orthotics and Prosthetics*: Treatment and care for people needing artificial limbs and the provision of support devices such as braces, callipers and splints for people needing physical support or protection.

Operating Department Practitioner*: Delivering safe, high quality care to surgical patients during anaesthesia, surgery and recovery.

Paramedic Science/Practice*: Learning the scientific, intellectual, practical and transferable skills required by a paramedic in the ambulance service; includes in-depth study of anatomy, physiology and other relevant scientific, behavioural and ethical issues.

Healthcare Science: Recently introduced as part of the NHS modernisation programme and encompasses a range of courses that normally include substantial periods of time spent on clinical placements in NHS settings:

> **Healthcare Scence (Audiology*): Assessing, diagnosing and rehabilitating people with hearing loss or balance disorders and testing, fitting and adjusting hearing aids.**
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> **Healthcare Science (Cardiovascular): Using specialist diagnostic equipment to give essential information to cardiologists so they can make accurate diagnoses and organise appropriate treatment.**
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> **Healthcare Science (Clinical Engineering): Providing scientific and engineering support to he NHS specialising in medical or rehabilitation or renal engineering and working on diagnostic and monitoring equipment, orthiopaedic devices or artificial organs.**
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> **Healthcare Science (Life Sciences): Providing a scientific and technological support role to the NHS through all life stages from prenatal screening to post mortem analysis.**
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> **Healthcare Science (Nuclear Medicine): Delivering the most advanced techniques for the diagnosis and treatment of disease utilising isotopes and radiation in its various forms.**
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> **Healthcare Science (Physiological Sciences): Investigating the functioning of body systems to assist in disease prevention, diagnosis and monitoring.**
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> **Healthcare Science (Radiotherapy Physics): Operating and quality assuring equipment and systems that relate to X-ray and gamma radiation and that capture and process images involved in diagnostic and therapeutic procedures.**
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> **Healthcare Science (Respiratory & Sleep Physiology): Using various diagnostic tests to investigate and examine lung function, eg cardiopulmonary exercise testing, bronchial challenge testing, allergy testing, lung volume measurement, respiratory gas exchange, blood ga analysis and response to treatment or exercise.**

Osteopathy: Treating illness and injury by the manipulation of bones and joints and working with the nervous system and blood supply to alleviate symptoms of asthma, migraines, stress or digestive disorders.

Chiropractic: Similar to osteopathy but more 'musculoskeletal' and aims to improve the condition of muscles, tendons and organs or relieve pain and tension by manipulation of the spine and alignment of vertebrae.

Complementary Therapies: The practice of holistic therapies such as acupuncture, aromatherapy, homeopathy or herbal medicine.

Pharmacy: Studying the origins, chemistry, actions and uses of drugs; the preparation and supply of medicines; the provision of advice on symptoms, drug therapy and drug storage; the promotion of healthy lifestyle choices; and the monitoring of side effects; leading to work in community or hospital pharmacies or in the pharmaceutical industry.

Pharmacology: Investigating the effects of drugs on humans and animals, researching and developing new drugs to treat disease and assuring the safety of substances used as pesticides, detergents, solvents or food additives.

Anatomy: Studying how a living organism works by exploring the structure and organisation of tissues and their component cells, and their inter-relationship.

Physiology: Studying the functions of living organisms such as how they grow, develop, reproduce and absorb and process nutrients.

Human Physiology: Overview of the human body and how it functions (whereas Biomedical Science focuses in on cellas and tissues)

Biology: The broad study of life and living things, centred around cells, genetics, ecology and the form and function of living organisms; it studies life in its variety and complexity, describing how organisms go about getting food, communicating, sensing the environment, and reproducing.

Human Biology: The application of human anatomy, human physiology, biochemistry and molecular and cell biology to issues like how blood pressure is controlled, what are the causes of obesity or how the systems of the human body are integrated to allow us to live in diverse environments.

Microbiology: Studying micro-organisms (bacteria, mycelia fungi, yeast and viruses) which affect humans in a variety of detrimental or beneficial ways, from causing disease to the production of antibiotics or fertilisers.

Biomedical Science: Some courses focus on the laboratory sciences associated with working in a hospital pathology department, covering haematology and transfusion science, medical microbiology, pathology and clinical chemistry; other courses (especially at universities with a medical school) may be more broadly focused on biomedical research – drawing on physiology, pharmacology, molecular biology, anatomy, genetics and neuroscience.

Immunology: How vertebrate animals react to foreign substances and how the body can resist or recover from infectious disease through an immune response.

Molecular Biology: Closely linked to Biochemistry, focusing on the very large molecules found in cells, especially the nucleic acids that control the transmission of information from one generation to the next. Is often studied in conjunction with Cell Biology, as in Molecular & Cellular Biology.

Cell Biology: Closely linked to Biochemistry, Molecular Biology, Anatomy and Physiology and is a key to the study of cancer, stem cell research and degenerative diseases.

Genetics: The study and manipulation of the molecular level of DNA sequences that encode the genetic potential of all living organisms and allow the transmission of inherited characteristics from one generation to the next.

Biochemistry: Study of the chemical processes in living organisms and the structure and function of cellular components such as protein, carbohydrates, lipids, nucleic acids and other biomolecules; can also cover areas such as blood, immune systems, nervous systems, enzymes and metabolism and links back to the study of physiology, genetics and molecular and cellular biology.

Neuroscience: How the nervous system responds to incoming sensory information and organisms and how it executes its response – complicated by the need for it to take account of mood, memory, the ageing process and the effects of infection or accidental damage; draws especially from anatomy, physiology, biochemistry and psychology.

Forensic Science: The application of science to the law. This is a very popular field. The number of students wanting to study it is far higher than the number of jobs in forensic science. But it can be very interesting to study.

Biochemical Engineering: Applying the latest technology to biological materials, processes and systems to enable the mass production of products such as vaccines, foods, sweeteners or to improve sewage treatment or create the magic bullets that locate and kill tumours.

Medical or Biomedical Engineering: The fusion of engineering science with clinical medicine, which is starting to play a central role in the development and improvement of treatment across a range of diseases and medical conditions.

Medical Physics: Maintaining and improving the quality, safety and cost-effectiveness of healthcare services through the specification, selection, acceptance testing, commissioning, quality assurance and clinical use of medical devices and protecting patients from exposure to physical agents such as x-rays, electromagnetic fields, laser light or radionuclides.

Biophysics: Studying life at every level, from atoms and molecules to cells, organisms, and environments, biophysicists use new innovations in biology and physics to explore questions like: How do protein machines work? How do systems of nerve cells communicate? How do proteins pack DNA into viruses? How do viruses invade cells? How do plants harness sunlight to make food?

Biotechnology: The use of micro-organisms, plant and animal cells, cellular organelles or enzymes to produce commercial products or processes, especially in agriculture, food, medicine, pharmaceuticals or the environment.

Biomaterials Science: Studying the properties of matter, their interactions with living cells and their application to science and engineering to produce innovative new healthcare products or processes.

Dental Materials: Combining science with manufacturing technologies and design to overcome dental and maxillofacial problems (bones of the jaw and face).

Zoology: The branch of biology that has a primary focus on animal life, evolution, ecology and physiology and that also helps us to understand animal behaviour and identify ways of enhancing animal welfare.

Environmental Health: Studying all aspects of the natural and built environment that may affect human health; leads to employment as Environmental Health Officers, usually working for local authorities.

Chemistry: The study of matter and energy and the interactions between them.

Medicinal Chemistry: Ideal if you have a strong interest in the biological aspects of chemistry; will include some pharmacology and physiology and may cover issues like drug toxicity, rational drug design and chemotherapy.

Sports Science or Sport & Exercise Science: Applying the principles of physiology, biomechanics, psychology and other science and social science themes to influence the ways in which a person can move, think, behave, recover, prevent illness, enhance lifestyle and perform to the best of their ability.

Clinical Exercise Science: Prescribing and managing exercise and rehabilitation programmes for people who may be healthy or have musculoskeletal injuries, long-term illness or disability.

Sports Therapy: The academic study of sports science and sports medicine to enable you, as part of an interdisciplinary team, to provide care, management and rehabilitation for sport and recreation participants of all ages and to help them to optimise training, preparation, injury prevention and performance.

Human Sciences: An interdisciplinary degree in which advanced discoveries in human biological function are studied in combination with the behavioural insights provided by the social sciences of psychology, sociology, human geography and anthropology.

Psychology: The scientific study of how the mind works and how biological and social factors shape human and animal behaviour; explores issues such as memory, decision-making and personality traits.

Childhood Studies: Explores how children develop from birth, how they acquire the ability to learn and think for themselves and how their development is influenced by their families and the community they live in.

Social Policy: Looks at the ways in which society handles the welfare of individuals and families; will explore issues like how scarce health resources should be allocated and how societies should provide care for the elderly and people with disabilities.

Healthcare Management, Policy & Research: Studying healthcare system delivery, innovation, safety, health policy, leadership, management, decision-making and the social science of healthcare, health services, research and data analysis.

Social Work*: Studies human growth and development, social welfare and law alongside the practical and professional skills needed to qualify as a social worker, where you may work with children, young people, families, adults, the elderly or people with disabilities or mental health issues.

Anthropology: The study of humankind and its origins, evolution, interactions and diversity; biological anthropology is focused around human evolution while social anthropology explores social and cultural differences and their determinants.

Primary Teaching: You can train as a Primary Teacher by taking a 3 or 4-year B.Ed or BA QTS degree, or by taking a degree in a curriculum-related subject followed by a 1-year course of postgraduate training.

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