



# OSKA pharmaceutical industry study

## *Key findings*

The pharmaceutical industry is a fast-growing sector, with an increasing focus on the development of biological medicinal products alongside traditional chemical medicinal products.

The growing need for medicinal products worldwide is being driven by the population ageing, the increasing prevalence of chronic diseases, but also by constantly improving diagnostic capabilities and growing health literacy.

The aim of the European Union to bring production back to Europe could open up investment opportunities for Estonian pharmaceutical companies.

The development opportunities for the Estonian pharmaceutical industry include a focus on more complex and knowledge-intensive activities and service provision at different stages of pharmaceutical development.

Innovative products and technologies in the pharmaceutical industry and the trend towards the development of biological medicinal products and personalised medicine can significantly boost the export potential of Estonia in the health sector.

## Employment forecast

In 2023, there were around 600 people working in the main professions of the Estonian pharmaceutical industry, including biotechnology research and development (R&D) related to pharmaceutical development. Estonia's largest pharmaceutical company by turnover produces veterinary medicines.

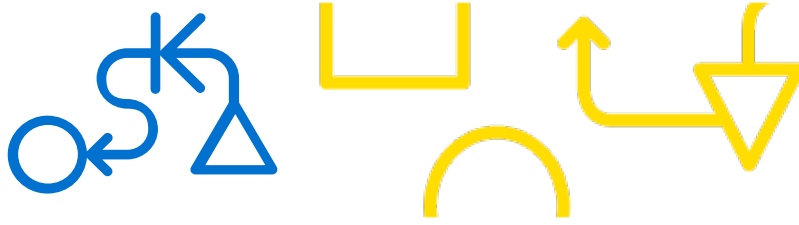
Employment in the pharmaceutical industry is forecast to grow by 70% over the next ten years. In addition, a quarter of the current workforce will reach retirement age and may need to be replaced. Graduates in chemistry, applied chemistry, biotechnology and genetic engineering, materials science, environmental technology, and pharmacy are particularly sought as top specialists in the sector. Both higher education and vocational education specialists are employed as quality inspectors and laboratory assistants, but more laboratory assistants with vocational education are required. The training of skilled workers falls entirely on employers, as there is a shortage of suitable VET curricula and graduates.



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## Labour and skills bottlenecks

Labour and skills bottlenecks in the pharmaceutical industry require both specific and flexible solutions.

The Estonian pharmaceutical industry companies lack specialists with pharmaceutical knowledge and a holistic grasp of pharmaceutical development and production (competent persons, quality managers, product development managers, laboratory managers, managers of medicinal product registration and marketing authorisation departments, etc.).

- The current five-year training for pharmacists at the University of Tartu is largely centred around retail pharmacy. Making the curriculum into a more flexible 3 + 2 bachelor's and master's degree would allow for a specialisation in pharmaceutical development at the master's level, which would also be open to graduates from other natural sciences disciplines.
- Compared to the rest of the world, Estonia has a significantly higher number of laboratory assistants with a master's degree, which suggests the inefficient use of labour resources and contributes to staff turnover.
- Laboratory assistant training is currently highly regionalised, limited to the Ida-Virumaa Vocational Education Centre, where teaching is partly conducted in Russian and more focused on the oil shale industry.
- Employers and schools need to work together to find solutions to expand learning opportunities for laboratory technicians with vocational education qualifications. People with universal basic laboratory skills are also needed in other sectors, including health, environment, agri-food, testing, and analytical services, etc. There is a shortage of chemical engineers with industrial engineering knowledge and experience (chemical industry engineers, product development engineers, production (technical) engineers, etc.) in the Estonian pharmaceutical industry.
- The teaching of chemistry and related disciplines in Estonian higher education tends to be more academic and science-oriented, neglecting the aspects of practical application of industrial engineering and engineering science.
- Chemical and pharmaceutical companies are often forced to outsource engineering skills abroad.

The studies for the OSKA skills and labour demand monitoring and forecasting system are conducted by the Estonian Qualifications Authority (SA Kutsekoda) with funding from the European Social Fund.