

Pharmaceuticals in the environment

Recent research confirms the presence of low levels of pharmaceuticals in the environment and suggests certain pharmaceutical ingredients could affect aquatic wildlife. Patient use is recognized as the main source for prescription and non-prescription medicines entering the environment. Activities associated with manufacturing or disposal of medicines result in pharmaceuticals entering the environment as well, but in much smaller quantities. Novartis shares the public's desire to minimize the impact of pharmaceutical product production and use on the environment.

Novartis Position

Novartis is committed to minimizing the environmental impact and assuming responsibility for its products over their entire lifecycle, as laid down in our Corporate Citizenship Policy. Pharmaceuticals entering the aquatic environment are an inevitable consequence of our business activity and of science-based healthcare treatment. As scientific knowledge in this area is rapidly progressing, we benchmark our activities at regular intervals to assure they reflect current state-of-the-art. We believe that the levels of active pharmaceutical ingredients found in the environment do not present a health risk for humans, as they are below the doses approved as safe by medicinal regulatory agencies according to current knowledge.

In order to understand and minimize the impact of pharmaceuticals on the environment, Novartis uses a four-fold strategy that applies to all its operations involved in the use of active pharmaceutical ingredients and comprises product development, waste minimization, research support and stakeholder collaboration:

- 1) We research the potential impacts of newly developed medicines on human and environmental health at an early stage in our R&D process, long before the product reaches the marketplace, and, where necessary, develop tailored strategies to minimize that impact.
- 2) We strive to minimize to the extent practical the discharges of active pharmaceutical ingredients in our wastewater. We avoid land filling pharmaceutical products and, whenever possible, pharmaceutical waste from our operations is incinerated in approved and state-of-the-art facilities. We work with our third parties to ensure they are guided by this policy in their waste minimization activities.
- 3) In order to advance society's understanding about the environmental fate and effects of pharmaceuticals, we support research initiatives that close critical data gaps in this area.
- 4) We actively support academia, regulators and other stakeholders in developing more efficient risk assessment practices for pharmaceuticals in the environment.