

Position on Pharmaceuticals in the Environment

As stated in [Our Credo](#): “We are responsible to the communities in which we live and work and to the world community as well ... We must maintain in good order the property we are privileged to use, protecting the environment and natural resources.” These core principles guide our efforts to proactively assess and mitigate potential risks associated with our active pharmaceutical ingredients (APIs) that may enter aquatic and terrestrial ecosystems. We do this by:

Conducting environmental risk assessments (ERAs) of our APIs to understand their impacts in the environment - Since 2006, we have conducted ERAs of all small molecule APIs used in our products prior to market approval. ERAs can range from exposure assessments and screening for characteristics of persistence, bioaccumulation, and toxicity (PBT) for low-volume products to more extensive risk assessments that determine predicted no-effect concentrations (PNECs) based on environmental toxicology tests. We have also completed ERAs for the majority of our legacy APIs that received marketing authorization before ERA test methodologies were standardized and adopted by regulatory authorities.

Controlling the concentrations of APIs that may enter the environment from our manufacturing plants - At our manufacturing plants handling active pharmaceutical ingredients, we employ good management practices to limit the amount of APIs that may enter the environment, such as closed transfers of process materials, dry cleaning of manufacturing processing equipment, prompt collection of any spilled dry powder materials, and advanced dust collection techniques. We monitor our wastewater for potential toxicity to aquatic species using a variety of methods (e.g., mass balance calculations, analytical testing, and whole effluent testing). We provide secondary wastewater treatment at a minimum for our manufacturing plants, and treatment may also include advanced technologies that target removal of APIs from wastewater.

Collaborating with suppliers to help mitigate concentrations of active pharmaceutical ingredients in the environment - As outlined in our [Responsibility Standards for Suppliers](#), suppliers to Johnson & Johnson are expected to operate in a sustainable and environmentally responsible manner, including continually working to reduce the environmental impacts of their operations and implementing programs

to manage wastewater that ensure compliance and mitigate impacts to the environment. We verify supplier environmental performance through several channels including: supplier scans through [EcoVadis](#), a sustainability ratings firm that evaluates companies' environmental and social responsibility; through active participation in the [Pharmaceutical Supply Chain Initiative](#), which sets common standards for responsible supply chain practices; and, through remote and on-site assessments conducted by Johnson & Johnson employees on a risk-based frequency.

Advancing the science related to PIE – We are committed to advancing the science related to PIE to help assess and address potential risks related to PIE. Our commitment is demonstrated by:

- Partnering with our peers to advance the science around microbial resistance to antibiotics in the environment. Through our collaboration in the [Antimicrobial Resistance Industry Alliance \(AMRIA\)](#) we contributed to the development of a new methodology to determine safe environmental levels (i.e., Predicted No Effect Concentrations or PNECs) specifically for antibiotics.
- Partnering with regulators, governmental agencies and peers to develop advanced computer-based tools to rapidly assess aquatic toxicity impacts of APIs through the [Innovative Medicines Initiative \(IMI\) iPiE Project](#) and through the successor project, the [IMI PREMIER project](#).
- Helping to launch the [Water and Environmental Technology \(WET\) Center](#)¹ as a founding industrial member. Through the WET Center we have supported research to develop targeted wastewater treatment technologies that address both traditional and emerging water contaminants in a sustainable manner.
- Contributing to scientific journal publications and presentations related to PIE, including important peer-reviewed publications such as the "[Science-based Targets for Antibiotics](#)," and "[A Risk-based Approach to Managing APIs in Manufacturing Effluent](#)," which serves as the basis for the industry's "[Responsible Manufacturing Effluent Management Technical Guidance Document](#)."

Educating patients and consumers on how to locate disposal options and instruct them on proper disposal methods to avoid flushing - We do this through several outreach efforts including the [MyOldMeds initiative](#) in the United States and [MEDSDISPOSAL](#) in the EU. We were also a founding member of the [Pharmaceutical Product Stewardship Working Group](#), which is the largest extended

¹ WET Center is a National Science Foundation Industry/University Cooperative Research Center led by Temple University with partner sites at the University of Arizona and Arizona State University. With over 30 industrial and government members, the WET Center conducts research and development that leads to the development of new water and wastewater treatment technologies and insights.

producer responsibility (EPR) organization in the United States dedicated to ensuring the proper collection and disposal of unused and/or expired medicines as well as used sharps.

Advocating for good PIE management practices – Through our membership in the European-based Inter-Association Initiative on Pharmaceuticals in the Environment (IAI PIE Taskforce), we supported development of the Eco-Pharmaco-Stewardship framework to address PIE, which includes an approach to extended environmental risk assessments for pharmaceuticals. Also through our membership in the Antimicrobial Resistance Industry Alliance (AMRIA), we contributed to the development of the [Antibiotic Manufacturing Standard](#).

Governance

Oversight of progress against environmental goals is a scheduled agenda item on the Board of Directors' relevant Committees, namely the Regulatory Compliance & Sustainability Committee (RCSC). The Chief Sustainability Officer (CSO), who leads the Office of Sustainability, presents updates on the progress toward environmental goals and targets to the RCSC at least annually. The CSO provides regular updates (at least quarterly) to the Executive Vice President, Chief Technical Operations & Risk Officer, who is a member of the Company's Executive Committee, and a management representative to the Board of Directors in the RCSC. The Executive Vice President, Chief Technical Operations & Risk Officer has ultimate approval over environmental strategy, risk management activities, policies, and disclosure. In addition to Executive leadership, members of our senior management have environmental performance indicators as part of their individual annual goals and objectives.

At the management-level, the CSO is a standing member of the Enterprise Compliance & Risk Committee (ECRC). The ECRC, chaired by our Chief Technical Operations & Risk Officer, is a centralized committee that provides governance and oversight of risk management activities, including on environmental-related issues across Johnson & Johnson. The ECRC has representation across sectors and functions and meets regularly to proactively review risk areas, integrate external risks and opportunities, and monitor risk mitigation plans and actions.

Finally, a third-party independent review of our environmental performance is conducted annually as part of our ISO 14001 Certification process.

Reporting and Disclosure

Our environmental performance is reported at a minimum annually through our Health for Humanity Report. Current and previous Health for Humanity reports can found [here](#).

Application

This Position is relevant for all Johnson & Johnson businesses, as detailed in our [governance materials](#). We provide updates, where relevant, relating to pharmaceuticals in the environment in our annual [Health for Humanity Report](#). Johnson & Johnson's ESG Policies and Positions on these and other issues are available in full [here](#).

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