L'ORÉAL
RESEARCH
& INNOVATION

Almost 4,000 scientists working for beauty

L'ORÉAL RESEARCH & INNOVATION

Science at the service of tomorrow's beauty

Almost 4,000 people work in Research & Innovation centres around the world discovering, inventing, developing and meeting consumers' beauty needs and aspirations with ever more effective products of irreproachable quality and safety.

SINCE THE START, RESEARCH AT THE SERVICE OF INNOVATION

For more than a century, L'Oréal research has developed on the basis of a deep belief: only rigorous research can lead to the development of cosmetic products capable of generating results. Our research and innovation model, unrivalled in the cosmetics industry, is organized around three main pillars:

ADVANCED RESEARCH

aims to continuously enrich scientific knowledge about skin and hair around the world, and discover new active ingredients.

APPLIED RESEARCH

develops new prototype formulas for the Group's various brands.

DEVELOPMENT

provides brands with innovative formulas to match the identity and expectations of their customers around the world.

BARBARA LAVERNOS
Chief Research, Innovation and Technolgy Officer

"We put science at the service of the safety and performance of our products, for an ever safer beauty that is always more respectful of the planet. By integrating the principle of transparency, respect for biodiversity, the fight against climate change, sustainable water management and the preservation of natural resources at the heart of our innovation. And thanks to new technologies (artificial intelligence, augmented reality...), we will increase our ability to offer products and experiences that are more personalized and more inclusive, serving all the beauties of the world."

Almost 4,000 scientists committed to beauty for all

Today, L'Oréal Group's Research & Innovation employs almost 4,000 scientists from 80 different nationalities, who all share the same passion for beauty and science. They work in around fifty different scientific disciplines: biology, chemistry, physics, microbiology, statistical analysis, toxicology, bioinformatics, algorithmics, dermatology, sociology, optics, metrology, ethnology, spectroscopy, etc.

JÉRÔME COMBEAUD
Director of Recruitment
and Career Development
L'Oréal Research & Innovation

"What sets L'Oréal apart is the ability of our research staff to work together across the disciplines, in a variety of innovation ecosystems, and with the freedom to push the boundaries of experimentation for disruptive innovation."

In 2020, the Group invested 3.4% of its sales, i.e. 964 million euros, in Research & Innovation. To innovate, it relies on significant assets:

A unique set of patented active ingredients which Advanced Research adds to every year with new elements, molecules and ingredients. With over 130 molecules developed over the last 50 years, the Group has a remarkable ability to patent major active ingredients, specifically thanks to green chemistry and biotechnologies (marine, bacterial or plant).

Mastery of formulation, enabling the process to go from molecule to finished product. Every year, thousands of formulas are developed by our teams.

Evaluation expertise, which is essential for placing new products on the market by demonstrating their safety and efficacy, in a scientific and rigorous manner...

RESPONSIBILITY AT THE HEART OF INNOVATION STRATEGY

L'Oréal's innovation strategy relies on a set of fundamental values, shared by all teams worldwide. It is particularly vigilant in its research activities in five areas: human health, respect for the environment, ethics, fair trade and consideration of the social and societal impact of every innovation.

Product safety: a top priority

In 1909, when Eugène Schueller founded the *Société des teintures inoffensives pour cheveux,* later to become L'Oréal, he was a pioneer. Since then, the Group has never stopped investing in safety evaluation of its ingredients and products.
So much so that L'Oréal can exceed regulatory requirements by performing non-mandatory clinical and laboratory tests. Today, thanks in particular to predictive evaluation for which the Group has designated a global center, teams can reliably predict the undesirable or beneficial effects of certain ingredients at a very early stage.

Respect for the environment

As early as 1995, the Group set up an environmental research laboratory to measure and model the possible impact of products on ecosystems (water and soil) and biodiversity. In 1999, it adopted the principles of green chemistry for synthesizing ingredients. Since 2006, its portfolio of raw materials has been continuously monitored by environmental indicators. Finally, innovation processes are constantly being improved with regard to eco-design rules that minimize the impact of products on the environment, throughout their life cycle. At the end of 2019, 85% of new products had an improved environmental profile.

Ethical scientific approach

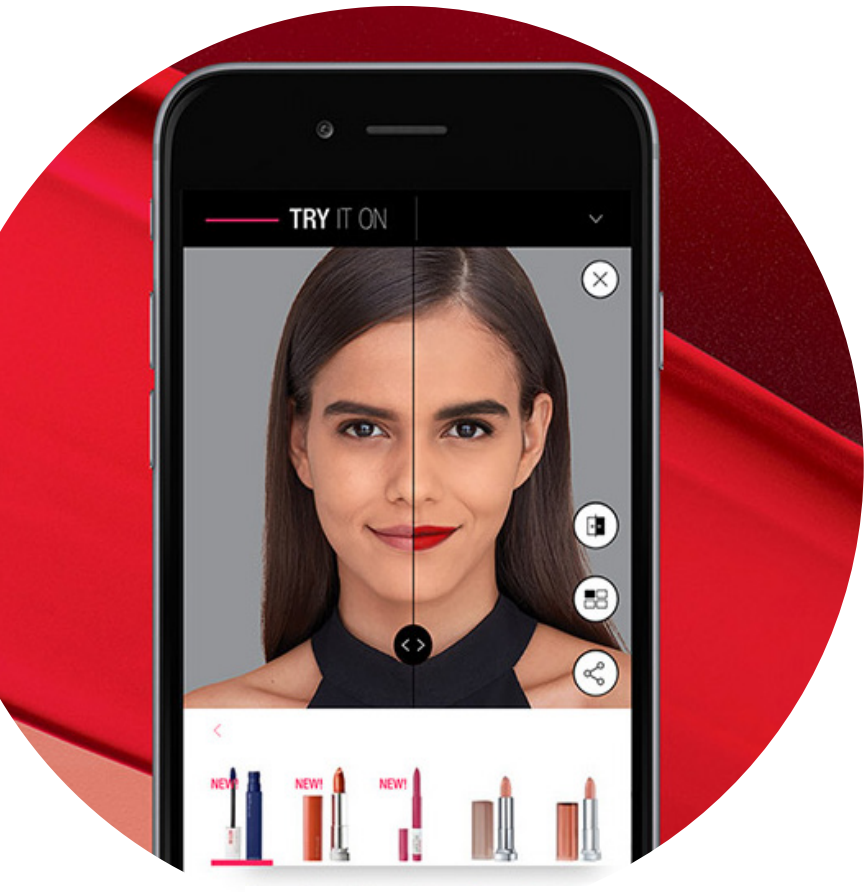
L'Oréal scientists have been able to place scientific progress (tissue engineering, decoding the human genome, modelling, imaging techniques) at the service of responsible innovation. Using new-generation tests makes it possible to evaluate ingredient safety without animal testing (L'Oréal stopped animal testing on finished products in 1989), and thanks to predictive testing, researchers can evaluate the safety and efficacy of new products and their ingredients at a very early stage.

Solidarity Sourcing

Through the worldwide scheme "Solidarity Sourcing" launched in 2010, L'Oréal has set up a global fair trade policy for the sourcing of its ingredients. Over and above a fair price, when selecting suppliers, it takes account of other dimensions such as the protection of biodiversity, the fight against bio-piracy, and the social and societal autonomy of local communities.

L'Oréal for the Future, a programme of long-term commitments

L'Oréal is committed to ensuring that, by 2030, all of its activities fall within the "planetary boundaries" (in accordance with the work of the Stockholm Resilience Center), meaning what the planet can support, according to environmental science.
To reconcile the Group's needs with the preservation of a planet with limited resources, L'Oréal is implementing a new internal programme of change, *L'Oréal for the Future,* in which Research & Innovation plays a major role in meeting the goals of sustainable water management, respect for biodiversity and sourcing of natural resources.



MEETING CONSUMER EXPECTATIONS

Ways of discovering, testing and buying cosmetics are constantly changing and customers are looking for an increasingly rich beauty experience.
L'Oréal relies on new BeautyTech technologies such as data acquisition, computer algorithms and artificial intelligence to offer increasingly personalised cosmetics: online skin diagnostics (Vichy Skin Consult AI), virtual make-up (L'Oréal Paris Make-Up Genius), ultra-personalised hair advice (Garnier Virtual Shade Selector) and personalised foundation (PERSO).

Combined with artificial intelligence techniques, studies conducted on thousands of women in a dozen countries have made it possible to create profiles of shades, preferences and care and make-up habits on which the algorithms generating personalised formulations are based.

Observing beauty routines to imagine products of the future

L'Oréal has chosen to make the infinite diversity of expectations and beauty routines around the world a source of inspiration and innovation. Research & Innovation echoes this approach.

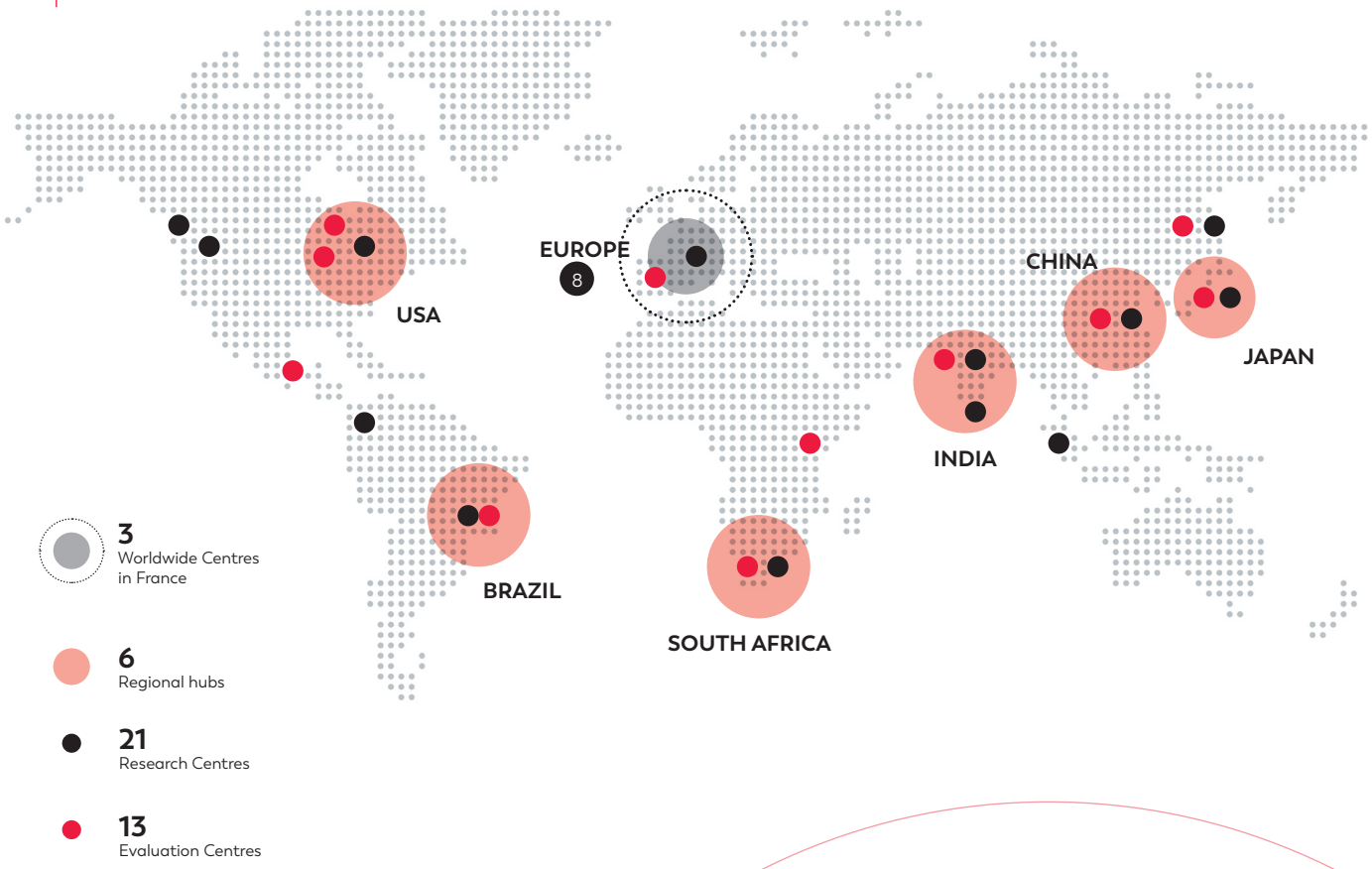
What are those beauty routines? How many minutes does a Japanese woman devote to her morning care? What are the key criteria for mascara use for an American, a Japanese, an Indonesian woman? Why do Brazilian women use so many hair treatments? What's good skin for a Chinese woman, an Indian girl? What are the enemies to beauty when you live in a huge city? Why are young Americans increasingly using cosmetic procedures? Why do more and more consumers make their own beauty products? How do they do it? These beauty routines and habits, which conceal physiological and cultural realities, are an incredibly rich source of information for Research & Innovation.

In its main evaluation centres around the world, L'Oréal *consumer* and *market insight* teams study behaviour using a wide range of expertise to understand consumers and their beauty routines as closely as possible (semiologists, anthropologists, ethnologists...). This data feeds the creativity of the Research & Innovation teams, who create products to meet local expectations and new major beauty trends.

"To create the beauty of tomorrow, we closely examine long-term trends, observing market developments and the behaviour of our consumers. We decode their needs taking into account their cultural and environmental contexts which have a considerable impact on their beauty aspirations. This work is key to anticipating consumer behaviour and ultimately creating relevant innovations that meet their requirements."

MARIE-CHARLOTTE PONSOT
Global Consumers & Market Insight Director

L'Oréal relies on its
21 Research & Innovation centres and
13 Evaluation centres, located around the world



L'ORÉAL R&I IN FIGURES

3,995
Employees

21
Research Centres

500
patents filed in 2020

Research & Innovation in a few key dates

1909
Eugene Schueller, creates L'Oréal with the 1st harmless hair dye

1979
1st human epidermis constructed in the L'Oréal laboratories

1982
Mexoryl SX Sunscreen included in the aqueous part of suncare products

1986
Niosome by Lancôme is the first anti-ageing cream with active ingredients encapsulated in niosomes

1989
Mexoryl XL Sunscreen included in the fatty part of suncare products

Animal testing ceases on finished products

1990
Diacolor, 1st permanent tone-on-tone colouring, without ammonia

1994
Model of pigmented human epidermis (Régnier-Schmidt). Demonstrating the pigmenting effect of UV light

1995
L'Oréal sets up an environmental research laboratory to measure and model the possible impact of products on ecosystems (water, soil) and biodiversity

1999
L'Oréal adopts the principles of green chemistry

2000
Description of melanocyte stem cells in the hair

2004
Disappearance of melanocyte stem cells during bleaching

2006
The chromasphère®, a skin colour measuring instrument patented by L'Oréal

Evaluation of the environmental impact of 100% of raw materials

2007
L'Oréal researchers develop a global classification of hair based on 8 categories ranging from very straight to very curly

1st atlas of signs of skin ageing

2009
Development of the Oil Delivery System (ODS) to replace ammonia in colourings with another, milder, odourless alkaline agent

2010
1st model of Asian reconstructed skin

2011
Inspired by the plant healing process, LR 2412 prevents and repairs age-related skin disorders

2014
Make Up Genius, virtual test application for make-up

2016
Launch of SPOT (Sustainable Product Optimization Tool), a tool to measure the environmental and social impact of all products at every stage of their life cycle

My UV Patch is the 1st flexible patch able to measure sun UV

2017
Le Teint Particulier by Lancôme, used to create a personalised foundation in store

2018
L'Oreal purchases the ModiFace technology

L'Oréal launches Custom D.O.S.E, a technology for custom formulation of anti-ageing serums

2019
SkinConsultAI, 1st skin diagnostic application proposed by L'Oréal Vichy

L'Oréal and La Roche-Posay launch "My Skin Track UV", a portable sensor able to measure exposure to UV rays

2020
Target announced: 100% new products with an improved environmental & social impact

L'OREAL unveils PERSO at the Las Vegas CES