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Orange Healthcare and Sanoïa endorse the use of machine learning to monitor chronic inflammatory rheumatism

Orange Healthcare, Sanoïa and the Pitié-Salpêtrière hospital in Paris demonstrate that flare-ups in inflammatory rheumatism (rheumatoid arthritis and axial spondyloarthritis) can be detected using an activity tracker combined with machine learning technology.

At the Annual Meeting of the [American College of Rheumatology](#) which took place in San Diego from November 3–8, 2017, Sanoïa and Orange Healthcare took part in a scientific presentation in collaboration with Professor Laure Gossec, from the rheumatology department at the Pitié-Salpêtrière hospital in Paris: an analysis of 15 million information points from a cohort of 170 patients monitored over 3 months, conducted by machine learning (*) ([Act-Connect study](#)).

Data scientists at Orange Labs used an in-house machine learning tool ([Khiops ©](#)) to develop a model that detects flare-ups in the condition with a reliability rate of 96%.

A promising trial

Using and analyzing anonymized data gathered from connected medical objects, the results of this trial were very promising. According to Élie Lobel, CEO of Orange Healthcare: “*The conclusions of this study are the result of cross-fertilization of expertise from industry, clinical research (CRO) and health professionals, demonstrating our ability to accelerate the development of services adapted to the monitoring of chronic diseases.*” This technique illustrates how artificial intelligence can be used in the healthcare domain. It can contribute to:

- **The care system:** it enables closer monitoring of the patient, through telemedicine or the scheduling of appointments around the activity of the disease,
- **Clinical research:** it offers continuous and real-time access to certain patient data. This data indicates the frequency of flare-ups and acts as a measure of the effectiveness of drugs in rheumatology.

Professor Laure Gossec says: “*putting the patient at the center of their care is our priority. Having access to digital tools that are easy to use, which can quantify a patient’s everyday experience and transform them into clinical indicators is extremely innovative.*”

“*The healthcare ecosystem has long sought to rely on connected objects, so as to be able to take full advantage of the data they provide in a medical context, as a source of information and predictability. This trial, which combines agility with scientific rigor, demonstrates how this is feasible in practical terms. We will now incorporate these outcomes in the Digital CRO we offer to sponsors of research,*” concludes Hervé Servy, CEO of Sanoïa.



(*) "Machine learning" is a field of study within artificial intelligence that provides a computer or a machine with a method of automated learning, enabling it to carry out a number of difficult or demanding tasks. The goal is to make the machine or computer capable of providing solutions to complex problems, by processing a huge volume of information. This offer thus makes it possible to analyze and identify correlations between two or more specific situations, and predict their various outcomes. Find out more about machine learning at: <http://www.lebigdata.fr/machine-learning-et-big-data>

About Orange Healthcare, the healthcare subsidiary of Orange Business Services

For more than a decade, through the many actions it has carried out with players in healthcare, Orange has gained substantial experience in digital healthcare and, in April 2016, a dedicated subsidiary was created: Orange Healthcare. This new subsidiary is part of Orange Applications for Business, which brings together all the sectoral expertise of Orange Business Services. Within Orange Business Services, Orange Healthcare has the technological know-how to offer solutions that are simple, reliable and effective in medical services and human services, thus contributing to providing innovative responses to the needs of both patients and healthcare professionals. Because they make it possible to optimize healthcare practices while guaranteeing the quality of healthcare services and equal access to those services, new technologies play an essential role in modernizing and improving healthcare systems. Facilitating and securing the transmission of medical information, reducing administrative costs, improving patient monitoring, developing systems for observation and management of risks in order to foster prevention, optimizing and customizing disease management by the patient, facilitating home support services for dependent individuals... these are just some of the new services being developed by Orange Healthcare.

For more information: www.healthcare.orange.com
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About Sanoïa

Sanoïa has been providing patients with a digital, secure solution for monitoring and safeguarding their healthcare data since 2010. The Sanoïa platform is recognized as being well-received by patients and improving interaction with their doctor. Since 2013, with the support of the BPI, Sanoïa has been making connections between patients' daily routines and clinical research. Sanoïa offers a full range of services above and beyond the collection of data for real-life clinical trials. Sanoïa is licensed to host personal healthcare data and ISO 27001 certified.

For more information: <https://www.sanoia.com/>

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