

This came naturally with the implementation of tests out of the competition period of the athletes. For an athlete, it has been observed that the homeostasis of biosynthesis and metabolism of endogenous hormones was not disturbed by sports activity but of course will be influenced by the intake of similar substances. Actually, the passport has been defined as an individual and longitudinal observation of biomarkers. These markers need to belong to the biological cascade influenced by the application of forbidden hormones or, more generally, affected by biological manipulations that can improve the performance of the athlete.

Nowadays, only the hematologic passport of an athlete has been officially set up. This is a statistical representation of the longitudinal follow-up of some blood biomarkers. This individual and longitudinal follow-up of blood parameters is of interest because the intraindividual variability is lower than the corresponding inter-individual variability. Among the key points for the implementation of the ABP is its possibility to resist to the legal and scientific challenges. The ABP should be implemented in the most possible transparent way in the process and with the necessary independence between planning, interpretation, and result management of the passport.

To reach this transparency and efficiency, a new major actor has been introduced in the system to create a framework of independence: The athlete Passport Management Unit (APMU). The World Antidoping Agency (WADA) did implement new dedicated technical documents associated with the passport (hematologic module). This was done to allow the correct implementation of a profile that can resist any scientific or legal critics in following strictly some steps in the chain of production of the results and in the management of the interpretation of the passport.

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## NEW INSIGHTS INTO THE MECHANISMS OF DIOXIN TOXICITY IN HUMANS

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**Summary:** Several million people are exposed to dioxin and dioxin-like compounds, primarily through food consumption. Skin lesions historically called “chloracne” are the most specific sign of abnormal dioxin exposure and classically used as a key marker in humans. We followed up for 5 years a man who had been exposed to the most toxic dioxin, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), at a single oral dose of 5 million-fold more than the accepted daily exposure in the general population. We adopted a molecular medicine approach, aimed at identifying appropriate therapy. Skin lesions, which progressively covered up to 40% of the body surface, were found to be hamartomas, which developed parallel to a complete and sustained involution of sebaceous glands, with concurrent transcriptomic alterations pointing to the inhibition of lipid metabolism and the involvement of bone morphogenetic proteins signaling. Hamartomas created a new compartment that concentrated TCDD up to 10-fold compared with serum and strongly expressed the TCDD-metabolizing enzyme cytochrome P-450 1A1, thus representing a potentially significant source of enzymatic activity, which may add to the xenobiotic metabolism potential of the classical organs such as the liver. This historical case provides a unique set of data on the human tissue response to dioxin for the identification of new markers of exposure in human populations. The herein discovered adaptive cutaneous response to TCDD also points to the potential role of the skin in the metabolism of food xenobiotics.

**Key Words:** dioxin, toxicity, skin, hamartoma, morphology

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## THE NEW ZEALAND CENTRE FOR ADVERSE DRUG REACTIONS MONITORING: A SOURCE OF PRACTICE-BASED EVIDENCE

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**Summary:** In New Zealand, there has been discussion around the value of evidence-based medicine in primary care and the case for complementary practice-based evidence that could feed back into the evidence from clinical trials on the generality and applicability of the interventions in the “real-life” context.<sup>1</sup> It is clear that databases of adverse drug reaction (ADR) reports are, in fact, a source of practice-based evidence.

In 1965, New Zealand became 1 of the first countries to collect and assess reports submitted by health professionals of suspected ADRs in individual patients. This collection is the database of the Centre for Adverse Reactions Monitoring (CARM) based in the New Zealand Pharmacovigilance Centre. Distinctive features of the New Zealand database are the high proportion of well-documented reports, and, frequently, the highest reporting rate/population in international comparisons. New Zealand was also a founding member of the WHO International Drug Monitoring Programme.

Databases of ADRs were established to generate hypotheses to be tested about previously unrecognized adverse reactions and interactions. Occasionally, they contain sufficient evidence in themselves. They can also identify prescribing practices that might increase the potential for ADRs to occur. They can feed back into guidelines the consequences of their use or nonuse and identify unexpected problems that arise with issues such as pathways to accessing funded medicines. Well-documented ADR reports can also highlight risk factors, thus providing a valuable contribution to risk/benefit assessments in individual patients. Examples from the New Zealand database and from international collaboration will be discussed that support the use of ADR reports as practice-based evidence in a nonhierarchical system in which case reports and case series, observational studies, and randomized clinical trials contribute in a flexible relationship depending on the issue under investigation.

One of the major challenges in optimizing the contribution of ADR databases to clinical practice is the provision of feedback that aids prescribing and also stimulates the quality as well as quantity of reporting.

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## Reference

1. Parsonson B. The case for practice-based evidence to support evidence-based practice. *J Prim HealthCare*. 2012;4:98-99.

## RISK PERCEPTION AMONG HEALTH CARE PROFESSIONALS AND THE PUBLIC: EXPERIENCE FROM REGIONAL MEDICINES INFORMATION AND PHARMACOVIGILANCE CENTRES IN NORWAY

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**Summary:** Risk perception associated with medicines information affects drug therapy and drug adherence. One problem is inconsistencies between sources providing medicines information, which give