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With >1000 authors, the updated "Minimum Information for Studies of Extracellular Vesicles" (MISEV) promotes rigor, reproducibility, and transparency in the liquid biopsy field

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Research on liquid biopsy analytes is exploding as the potential for clinical use is increasingly demonstrated in fields such as cancer and prenatal screening. Extracellular vesicles (EVs) are among the most studied circulating particles, not just as a source of biomarkers but also as cell-cell communicators implicated in normal physiology and numerous pathologies [1–3]. However, the world of EV research has been hindered by vast inconsistencies, discrepancies and lack of transparency in EV isolation and characterization, as well as reporting.

In 2014, the International Society of Extracellular Vesicles (ISEV) released the first position paper *(Lotvall* et al. *2014)* [4] designed to give robustness to EV analysis. This first field consensus guidance marked a major leap in addressing the numerous challenges of EV research. Four years later, the society updated these guidelines through the Minimal Information for Studies on Extracellular Vesicles (MISEV) *(Thery* et al. *2018)* [5]. MISEV strives to assist EV researchers and practitioners in adopting optimal approaches from definition and categorization, separation, characterization, engineering, and clinical applications. MISEV2018 significantly contributed to advancing the field, offering a thorough and enduring evaluation of approaches and methods.

For the past decade, these resources have served as internationally recognized guidance for the field, pointing researchers to the best technologies, analysis methodologies, and reporting recommendations in this difficult-to-study area. Now, ISEV leaders have come together once again – this time with more than 1000 contributors – to update this document in the newly published MISEV2023 [6]. The updated guidelines portray the current landscape of EV research, gathering insights from ISEV expert task forces and over 1000 researchers, aiming to enhance robust scientific discoveries and propel the field forward at an accelerated pace.

This global effort involved researchers from 52 countries and took 3 years to complete. An initial survey was sent to 5700 EV researchers, leading to 1025 responses, that ultimately led to refinement and tuning of the document. Highlights from MISEV2023 include updated and/or new sections on: Nomenclature, Pre-analytical variables, EV separation and concentration, EV characterization, Technique-specific reporting requirements, EV release and uptake, EV functional studies, and EV *in vivo* studies.

MISEV2023 does not serve as a universally applicable template, nor does it operate as a rigid set of rules, a replacement for meticulous expert consideration, or a barrier to innovation. Rather, this carefully crafted document is meant to provide a collection of recommendations designed to improve rigor, reproducibility, and transparency throughout design, execution and reporting of EV studies. This resource can assist reviewers and editors, leveraging their expertise to evaluate the merits and shortcomings of proposals, funding applications, abstracts, and manuscripts related to EV research. Taken together, this massive undertaking provides a framework that supports innovative EV research and applications, bridging gaps in methodological considerations, encouraging transparency of experimental details and promoting consistency in terminology, nomenclature and experimentation. As the liquid biopsy field grows, it is important that the literature is based on reliable data obtained through reproducible experiments and reported using appropriate norms. In short, MISEV2023 aims to encourage just that.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. Julia V. Burnier was also the author of paper referenced in letter.

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