

Presented by:

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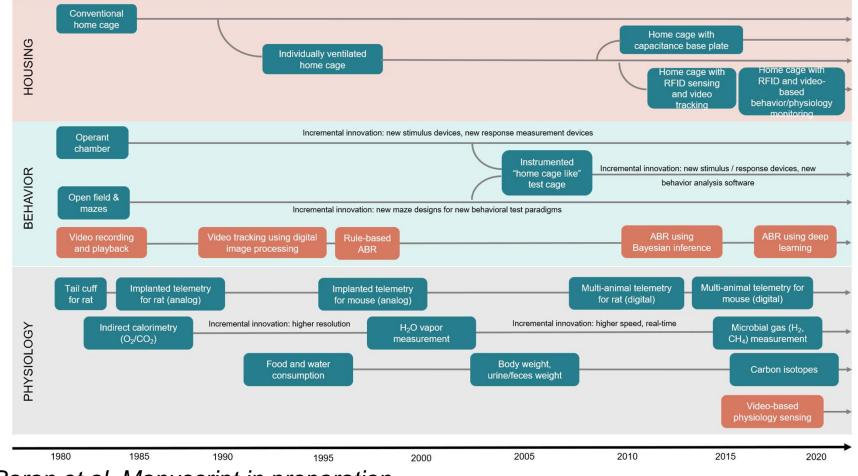


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- History of digital monitoring
- Example of integration DVC[®] Intellicage
- Different considerations
- Timeline with Pharma Example



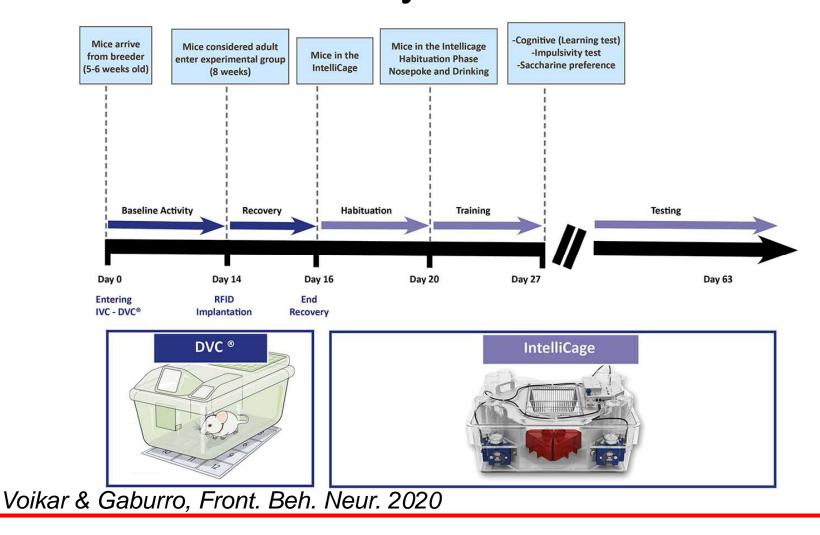
Legacy and new technologies in homecage monitoring



Baran et al, Manuscript in preparation

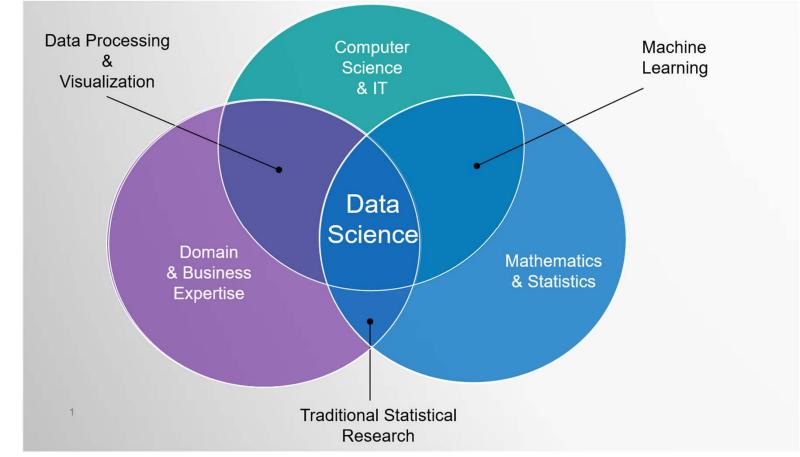
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Integration of technologies: NO-all-in-one system





Consideration for digital home-cage on monitoring



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Timeline onboarding new technologies: Pharma example



* These timelines can be significantly prolonged if data will be used for regulatory submissions since the validation process would have to meet regulatory requirements.

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Why to use digital biomarker in preclinical settings

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Animal Welfare	Operational	Scientific	Strategic
⊥ m orbidity	Automated data analysis	Noninvasive, objective & quantitative biomarkers in	↑ predictive pre-clinical models
↓ m orta lity	Digitization of data/ processes	undisturbe d animals	noncompliance risk
↓ handling stress	Incorporation of digital analytics	Real-time data capture & a nalytics	Earlier decisions
Objective a ssessment of welfare & enrichment	Assessment of virtually all animals	A bility to capture variability between day to night, night to	↑ clinical relevance
3Rs reduction of number of a nimals via increased	↓ fre que ncy in-person asse ssment &	night, and day to day variability Broadly applicable digital	Informing first in hum an (FIH) studie s
translation 3Rs refinement via	↑ flexibility =↓ staff burden	biomarkers	↑ Operational efficiency
enhanced monitoring of hum an endpoints & adverse events & reduced		Disease specific digital biomarker	↓ cycle times by shortening pre-clinical phase
handling		↑ frequency of data collection & use of continuous data flows to more accurately & rapidly detect	

Preclinical biomarkers aligning with clinical biomarkers

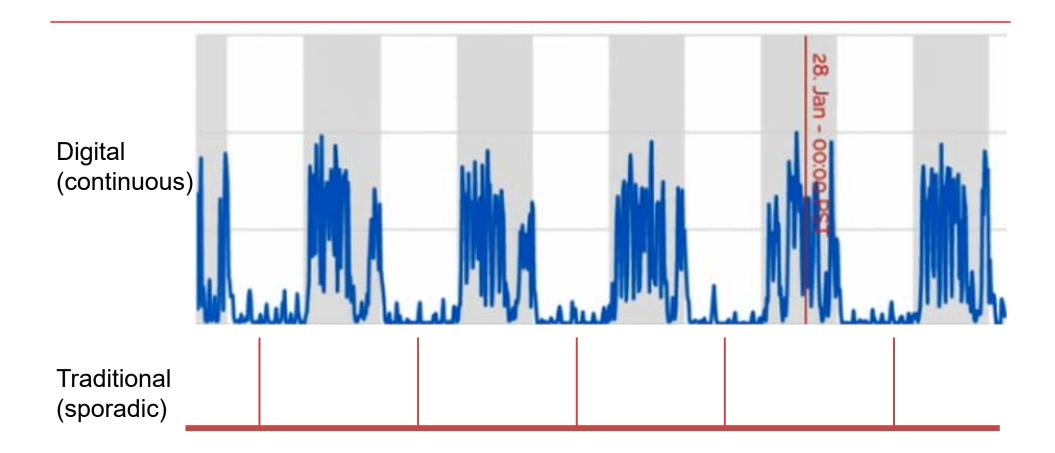
signals

Inform experimental planning

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Innovation Holistic model passion





Take-home messages assign

- Digital home cage monitoring is still considered a "new technology"
- Adoption might not be straightforward (data quantity, cybersecurity, IT, maintenance)
 - 3Rs (especially in Europe) and 3vs (construct, internal and external validity) are pushing towards such technologies.



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Thank You!