

## Why we do not have an omics-based clinical risk score?

- ▶ Most ML methods apply standardisation on both training and validation data
- ▶ But in clinical prediction, you might only have single samples to predict on

New X	Sample 4
Gene 1	4.2
Gene 2	3.8
Gene 3	8.4
Gene 4	3.1

## But what about breast cancer?

Name	Predictors	Targets	Prediction	Technology	Legit?
Oncotype DX	21 genes	ER +	Score	qRT-PCR	ASCO, NCCN
Prosigna	50 genes	Hormone receptor +	Score	NanoString	FDA 510k
MammaPrint	70 genes	Any ER status	Binary	DNA microarray	FDA

- ▶ Alvarado et. al. (2015) reported poor concordance in the prediction scores
- ▶ Hyeon et. al. (2017) considered NanoString as a viable alternative to RT-PCR