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Scoop: Apple wants iPhones to detect depression/anxiety, cognitive decline, even autism. Fascinating implications, if it works… (1/n)

https://t.co/9rzX7yYl3e

Big expansion in Apple's health ambitions: using its flagship device, the iPhone, to tackle mental/brain health. Apple's health features have mostly been confined to Apple Watch. The Watch unit is where the health team sits, for instance. (2/n)

Lots of promise here: these conditions typically require a specialist to diagnose you (not available/accessible to many) and can rely on self-reported questionnaires or caregiver observations (subjective, sometimes not reliable) (3/n)

Could algorithms in your iPhone find the digital equivalent for mental health of a high cholesterol test for heart disease? (4/n)

First scientists have to determine if the signals observed by your iPhone (and Watch) are associated with the target conditions. To see if those signals can be turned into a detection algorithm. (5/n)

What signals we talking about? Stuff like facial expressions, the emotions in your voice, even what you type, also heart rate, sleep quality, how far/frequently you venture from home, how fast you walk. Research partners UCLA/Biogen looking at a subset of these data (6/n)

For instance, here are 10 moods the iPhone can now infer about you based on what you type. They include "anxiety" "anger" "positive" and "death". UCLA could be among the first researchers to get access to these metrics. (7/n) **https://developer.apple.com/documentation/sensorkit/srkeyboardmetrics/sentimentcategory**

Obvious privacy concerns, though researchers are looking at algorithms that would run on device, our reporting showed. And you can imagine if this ends up in new iPhone features they would likely be opt-in. (8/n)

The autism work slightly different. That's about having parents show videos to their children and the front facing camera observing the kids' reactions to see if they could be on the spectrum. Early work has shown this can detect known autism markers. (9/n)

But the challenge isn't just saying these markers associated with autism (or depression or cognitive decline) are present in people that have been diagnosed by traditional methods. That's just a first step. (11/n)

Next hard part: can those signals be turned into an algorithm to reliably detect the conditions? (10/n)

One coda to the story: Biogen's Aduhelm approved in July to treat mild cognitive impairment. If Biogen can help Apple find an algorithm to detect the condition, that could lead lots more people to seek treatment early. (11/n)