Results

● Without FFA, the percent of patient samples having less than 4% FF varied by ethnicity; for example, 6.36% of samples from patients with African ancestry (N=27,151 samples) had less than 4% fetal fraction, versus just 2.42% of samples from patients with East Asian ancestry (N=8,039 samples). With FFA, the percentage ≤4% FF fell to less than 1% across all ethnic groups (Figure not shown).

● Patients with high BMI benefited from the incorporation of FFA.

● Without FFA, 12.95% of samples from patients with obesity (obesity classes I-III) (N=88,415) had fetal fractions <4%. Low FF was most pronounced in patients with class III obesity (21.15%), followed by class II obesity (12.43%) and class I obesity (6.89%; Fig 2).

● With FFA, only 0.28% of samples from patients with obesity (obesity classes I-III; N=81,027) had FF ≤4%, greatly reducing the chance of test failure. Notably, FFA increased FF effectively even in patients with class III obesity, with only 0.66% of these patients experiencing a test failure after FFA was implemented (Fig 2).

Methods

● We retrospectively analyzed results from 496,494 samples from individuals with BMI > 18.5 that underwent pcfDNA with Myriad’s Prequel prenatal screen from December 2016 through July 2022.

● 279,038 patient samples underwent standard screening (without FFA), and the remaining 217,456 underwent screening after the launch of FFA.

● We compared the percent of samples with <4% FF before and after the launch of FFA, stratified by self-reported ancestry and by BMI.

Conclusion

These results indicate that pcfDNA with FFA improves disparate FF distributions, thereby providing more equitable risk assessment regardless of patient ethnicity and supporting weight-neutral clinical care.