

# NOT ALL PREIMPLANTATION GENETIC TESTING IS CREATED EQUAL: EVALUATING PATIENT OPINIONS BASED ON TEST TYPE

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## OBJECTIVE:

Evaluate patient motivations for pursuing preimplantation genetic testing (PGT), insurance coverage implications and utility of PGT to their IVF cycle.

## DESIGN:

In-vitro fertilization (IVF) can be combined with PGT. Patients seeking to reduce hereditary disease risk for monogenic disorders can pursue PGT-M. Those with an underlying structural chromosome rearrangement can opt to have embryos tested for unbalanced outcomes (PGT-SR). Additionally, patients undergoing IVF can screen their embryos for aneuploidy (PGT-A). Increased availability of testing requires providers to understand patient motivations, potential barriers and how to integrate PGT into an IVF cycle.

## MATERIALS AND METHODS:

- All patients undergoing pre-test genetic counseling through CooperGenomics were eligible to take a survey.
- Responses were collected in SurveyMonkey and then analyzed for themes.

## RESULTS:

Between April 2019 and May 2020, there were 169 respondents; 100 PGT-A only, 16 PGT-SR, and 53 PGT-M (with and without PGT-A).

Patients were asked whether PGT contributed to their deciding to pursue IVF. 38/51 (75%) of PGT-M patients and 10/16 (63%) PGT-SR patients stated that PGT was a “very important” factor in deciding to pursue IVF while PGT-A patients were less likely to pursue IVF for the purpose of performing PGT; 16/100 (16%) cited PGT as a reason for pursuing IVF.

PGT-M and PGT-SR patients were similarly motivated to pursue IVF, even if insurance coverage was not available. More than two-thirds of PGT-M and PGT-SR patients would continue with IVF in the absence of insurance coverage. PGT-A patients were mixed, with 44/96 (46%) stating that they would continue with IVF in the absence of insurance coverage; 39/96 (41%) of patients were uncertain.

For PGT-A patients, the most common reasons for pursuing PGT were “infertility” and “doctor recommended”. For PGT-M patients, “carriers of the same genetic disease” and “personal/family history of a genetic disease” and PGT-SR patients reported “previous miscarriage(s)” and “personal/family history of a chromosomal condition”.

**FIGURE 2** Would you still pursue PGT if you did not have insurance coverage?

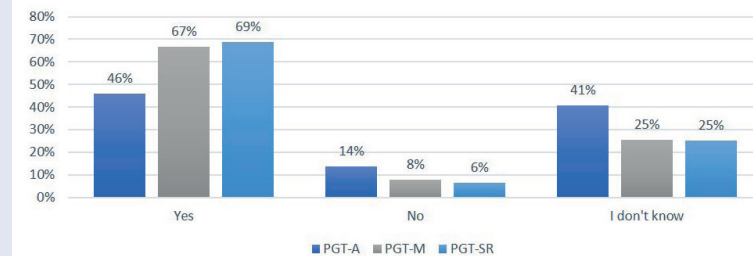


Figure 2: Would you still pursue PGT if you did not have insurance coverage? All participants were asked if they would still pursue PGT if they did not have insurance coverage. Four participants did not answer this question.

9% (32/165) of all respondents previously had genetic counseling for PGT. More specifically, 9/98 (9%) of PGT-A patients, 6/16 (38%) of PGT-SR patients and 17/51 (33%) of PGT-M patients previously had genetic counseling for PGT. CooperGenomics genetic counseling was rated “useful” or “very useful” by 93% (90/97) of PGT-A patients, 88% (14/16) of PGT-SR patients and 88% (45/51) of PGT-M patients.

**FIGURE 3** What brings you to preimplantation genetic testing (PGT)?

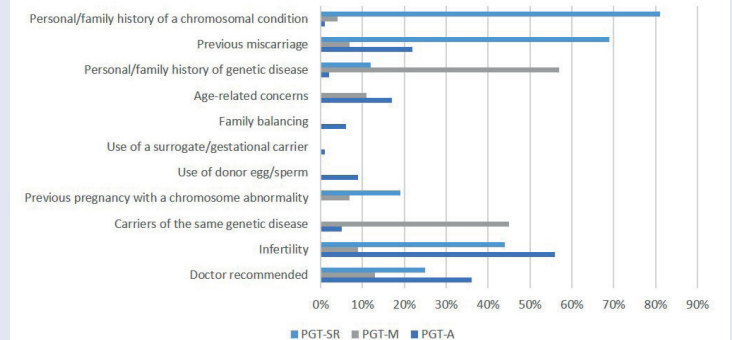


Figure 3: Patient-perceived reasons for pursuing PGT. Respondents were instructed to select all that apply and most individuals selected more than one answer. Six responses listed as “Other” were able to be counted into one of the above categories.

**FIGURE 1** How important is PGT to your current IVF process?

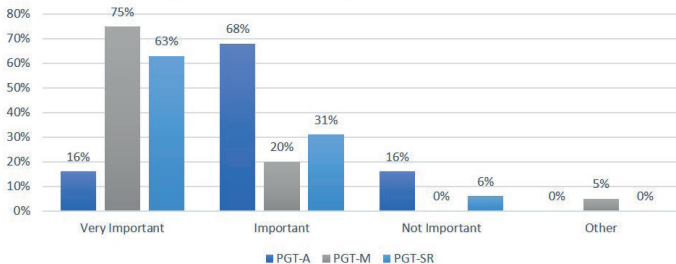


Figure 1: Importance of PGT to a patient’s IVF cycle. Respondents were asked to rate the importance of PGT to their current IVF cycle as either Not important/I am already doing IVF and PGT is available, Important/I am doing IVF and PGT is a significant part of my plan, Very important/I am only doing IVF in order to do PGT, or Other. Three respondents in the PGT-M group selected “Other” and provided comments.

## CONCLUSIONS:

Overall, patients pursuing PGT-M and PGT-SR had similar goals for PGT. These patients report that PGT is a very important factor in deciding to pursue IVF and are more likely to pursue IVF without insurance coverage as compared to PGT-A patients. Importantly, insurance coverage is a main factor for the reason why

patients without an underlying genetic condition or aberration may pursue PGT. Patients who are pursuing PGT-M or PGT-SR rate PGT as very important to their IVF cycle as it may be the only reason for pursuing IVF. Although PGT is an important reason for these patients

to pursue IVF, the majority have not spoken with a genetic counselor regarding PGT yet found genetic counseling for PGT useful. It is important to understand the motivations of patients seeking IVF and utility of PGT for each patient.