### Introduction
The British Society of Gastroenterologists (BSG) have produced guidelines for risk stratification and colonoscopic surveillance of people with a family history (FH) and known mutations of colorectal cancer (CRC). To our knowledge, there has been no attempt to validate the empirical BSG criteria for assessing risk in people attending clinical genetics services concerned by their FH of CRC.

### Methods
FH data was obtained for all unaffected people with a family history of CRC, referred to Tayside clinical genetics from 2000-2009. Risk category according to BSG guidance was assigned de novo (low-population, low-moderate, high-moderate and high). Individuals who went on to develop adenomatous polyps or CRC were identified by record linkage. The risk and the rate of CRC development and adenoma detection were calculated with each group using Relative Risk and Kaplan Meyer Survival Analysis (KMSA) respectively. Analyses involving the high-risk group was conducted both including and excluding mutation carriers (MC).

### Results
1120 patients were identified and after exclusion criteria, there were 728 non-polyposis patients (288 low-risk, 316 moderate-risk and 121 high-risk, including 31 MC) with a total of 5562 patient years of follow-up. Eight invasive CRC developed, 2 in low, 3 in moderate and 3 in high-risk groups (2 of those in MC). There were also 65 adenomatous polyps (including and excluding mutation carriers (MC)).

Analyses involving the high-risk group was conducted both including and excluding mutation carriers (MC).

### Conclusion
The mutation group have a significantly higher rate of polyp detection in all categories compared to the low-risk group. There was a significantly increased rate of CRC developing in MC but not in the other risk-groups. KMSA showed no significant difference in the rate of CRC development between the risk-groups. There was a higher risk of detecting polyps in the high-risk group compared to the low risk, especially when less than 50 years old. There was a significantly higher rate of polyp detection in all categories compared to the low-risk group.

### Conclusions
The mutation group have a significantly higher risk of CRC development, but regular screening appears to reduce this risk. For the rest of the risk-categories, the results show that there was no significant difference in the rate of CRC development when enrolled to a screening programme. Colonoscopic surveillance appears effective in reducing the cancer incidence in high-risk groups below 50 years old, presumably through polyp removal, thereby supporting the current guidance. The study also reaffirms the recommendations that surveillance in medium-risk group is not required below the age of 50. In this context, BSG guidelines appear to effectively stratify risk for familial CRC and screening in these individuals carries a clinical benefit.