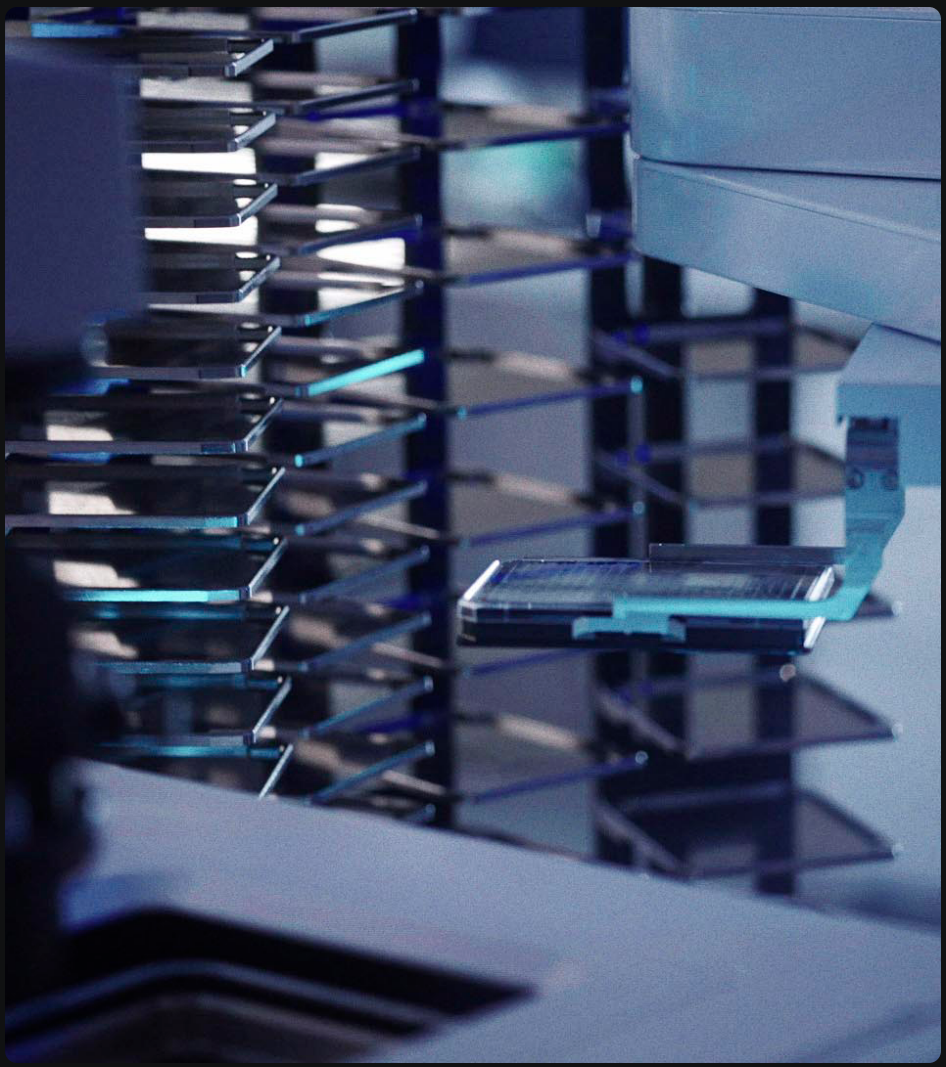
TEMPUS | ONCOLOGY

xG/xG+

Tempus hereditary cancer testing

xG (CancerNext®)
xG+ (CancerNext-*Expanded*®)
+RNAinsight®



A complete picture of your patient's disease includes their hereditary risk

Tempus has partnered with Ambry Genetics® to provide germline testing. These tests are designed to detect various germline variants associated with hereditary cancer syndromes.

xG (CancerNext®) (40 gene panel)

Guidelines-based germline panel that includes genes associated with hereditary breast, ovarian, pancreatic, prostate, colorectal, endometrial, gastric, small bowel, urothelial, and renal cancers.

xG+ (CancerNext-*Expanded*®) (77 gene panel)

Germline panel that includes genes associated with hereditary breast, ovarian, pancreatic, prostate, colorectal, endometrial, gastric, small bowel, urothelial, renal, plus an array of additional cancers.

+RNAinsight®

An optional add-on for **xG (CancerNext®)** or **xG+ (CancerNext-*Expanded*®)** that analyzes RNA to support the classification and detection of DNA variants.

Ordering options

Our comprehensive platform allows for easy ordering options:

- **xG (CancerNext®)** or **xG+ (CancerNext-*Expanded*®)** can be ordered as a standalone test or as a confirmatory test for potential germline findings identified in the professional services report of Tempus xT CDx sequencing, helping to identify more patients at risk of hereditary cancer.
- Optionally add **+RNAinsight®** to **xG (CancerNext®)** or **xG+ (CancerNext-*Expanded*®)**.
- Familial variant testing available for at-risk family members—no additional cost if ordered within 90 days of original **xG (CancerNext®)** or **xG+ (CancerNext-*Expanded*®)** report.
- Through one platform, somatic and germline testing can be ordered.
- Flexible ordering options via Tempus Hub, EHR integration, or paper requisition.

The value of germline testing

Up to 10% of all cancers are associated with hereditary cancer syndromes.[1]

Hereditary cancer testing can help tailor cancer treatment approaches, clarify risks for additional cancers, and help determine screening and risk reduction options.

xG (CancerNext®) and **xG+ (CancerNext-*Expanded*®)** provide validated germline testing to confirm potential germline findings identified on somatic reports.

Hereditary cancer germline testing may also be utilized to assess variants suspicious for germline presence detected on tumor only sequencing or liquid biopsy and to test for Lynch syndrome for individuals with MSI-High tumors.

Enhancing hereditary testing with RNA

Increased diagnostic accuracy

~1 in 25 positive patients may receive negative/inconclusive results without RNA analysis.[2]

Reduced uncertainty

Decreases rates of variants of uncertain significance (VUS) by **~6%**.[2]

Enhanced variant classification

~5% of hereditary cancer cases leverage RNA data in variant interpretation, with patients receiving DNA-only germline testing also benefiting from the technology.[3]

Equitable insights

Addresses evidence gaps in underrepresented populations. **+RNAinsight®** has provided functional data for non-white patients.[3]

Easy to interpret results

Reports include pathogenic and likely pathogenic variants, as well as variants of uncertain significance. Amended reports are provided for variant reclassifications when available.

If **+RNAinsight®** impacts the germline findings, it will be noted under the "Interpretation" section of the **xG (CancerNext®)+RNAinsight®** or **xG+ (CancerNext-*Expanded*®)+RNAinsight®** report.

Results expected to be available approximately **14-21 days after specimen receipt**. Reports delivered through Tempus Hub or email/fax.

Specimen and kit requirements

xG (CancerNext®) / xG+ (CancerNext-*Expanded*®) blood collection kit

4ml lavender top EDTA tube

BLOOD COLLECTION KIT
DNA Hereditary Testing

xG (CancerNext®) /xG+ (CancerNext-*Expanded*®) saliva collection kit

1 Oragene (OGD-510) self-collection container

SALIVA COLLECTION KIT
DNA Hereditary Testing

Samples will be sent to Ambry Genetics® using the dedicated Ambry collection kits.

Specimen and kit requirements

Cultured Fibroblast specimen require completion of the additional skin punch biopsy form

Reach out to your Tempus representative for more info on the tissue culturing form, or visit tempus.co/tissue-culturing-form.

+RNAinsight® blood collection kit

1 PAXgene® blood tube for RNA analysis + 1 lavender top EDTA tube for DNA testing.

BLOOD COLLECTION KIT
DNA + RNA Hereditary Testing

- Draw EDTA blood tube first, then draw PAXgene® blood tube last. Position PAXgene® tube vertically below the collection site. If only a PAXgene® tube is to be collected, **FIRST** collect a small amount of blood in a discard tube, **THEN** collect blood into the PAXgene® tube.
- Ensure the tube remains vertical, drawing a minimum of **2.5 mL** of blood. Follow the collection instructions as provided in the specimen kit
- **Specimen Processing:** Gently invert tube 8-10 times immediately after draw, before sitting and/or shipping.

Samples will be sent to Ambry Genetics® using the dedicated Ambry collection kits.

xG (CancerNext®) Gene Panel

APC	*ATM*	*AXIN2*	*BAP1*	*BARD1*	*BMPR1A*
BRCA1	*BRCA2*	*BRIP1*	*CDH1*	*CDKN2A*	*CHEK2*
EPCAM	*FH*	*FLCN*	*GREM1*	*HOXB13*	*MBD4*
MET	*MLH1*	*MSH2*	*MSH3*	*MSH6*	*MUTYH*
NF1	*NTHL1*	*PALB2*	*PMS2*	*POLD1*	*POLE*
PTEN	*RAD51C*	*RAD51D*	*RPS20*	*SMAD4*	*STK11*
TP53	*TSC1*	*TSC2*	*VHL*		

xG+ (CancerNext-*Expanded*®) Gene Panel

AIP	*ALK*	*APC*	*ATM*	*AXIN2*	*BAP1*
BARD1	*BMPR1A*	*BRCA1*	*BRCA2*	*BRIP1*	*CDC73*
CDH1	*CDK4*	*CDKN1B*	*CDKN2A*	*CEBPA*	*CHEK2*
CTNNA1	*DDX41*	*DICER1*	*EGFR*	*EPCAM*	*ETV6*
FH	*FLCN*	*GATA2*	*GREM1*	*HOXB13*	*KIT*
LZTR1	*MAX*	*MBD4*	*MEN1*	*MET*	*MITF*
MLH1	*MSH2*	*MSH3*	*MSH6*	*MUTYH*	*NF1*
NF2	*NTHL1*	*PALB2*	*PDGFRA*	*PHOXB2B*	*PMS2*
POLD1	*POLE*	*POT1*	*PRKAR1A*	*PTCH1*	*PTEN*
RAD51C	*RAD51D*	*RB1*	*RET*	*RPS20*	*RUNX1*
SDHA	*SDHAF2*	*SDHB*	*SDHC*	*SDHD*	*SMAD4*
SMARCA4	*SMARCB1*	*SMARCE1*	*STK11*	*SUFU*	*TMEM127*
TP53	*TSC1*	*TSC2*	*VHL*	*WT1*	

xG (CancerNext®) / xG+ (CancerNext-Expanded®) powered by Ambry Genetics® is available to select providers.

1 *Family cancer syndromes. American cancer society. Updated September 14, 2022. Accessed March 29, 2024. https://www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html*

2 *Horton C, Hoang L, Grzybowski J, et al. Expanding the reach of paired DNA and RNA sequencing: results from 450,000 consecutive individuals from a hereditary cancer cohort. Oral presentation presented at: Annual Meeting of the American Society of Human Genetics; 2024 Nov 6-8; Denver, CO.*

3 *Horton C, Hoang L, Zimmermann H, et al. Diagnostic Outcomes of Concurrent DNA and RNA Sequencing in Individuals Undergoing Hereditary Cancer Testing. JAMA Oncol. 2024;10(2):212–219.*

We help provide access to our tests for patients in financial need.

All Tempus tests, including xG/xG+, are eligible under the program. Patients can complete the application online at access.tempus.com or call 800.739.4137 to speak to a member of our team.

If you have any questions on our comprehensive portfolio of available tests, please contact your Tempus Representative or email support@tempus.com.