Unilabs

Recent advancements in urological diagnostics

Bridging the gap between innovation and clinical practice

Urological care has undergone profound transformations in recent years, driven by advancements in technology and a more nuanced understanding of the genetic and molecular mechanisms underlying urological diseases. The integration of artificial intelligence (AI) and precision diagnostics has particularly revolutionised the field of urology, enabling more accurate diagnoses and personalised treatment plans. This editorial aims to provide an overview of these advancements and their implications for clinical practice.

AI-powered Pathology

Leading urological patient care with confidence and accuracy

Pathological evaluation is essential in prostate cancer diagnosis, but variability among pathologists remains a challenge. AI enhances diagnostic accuracy and predicts outcomes in urology. Tools like Ibex Galen™ for Prostate improve diagnostic precision and confidence, transforming pathology to optimise patient care and treatment outcomes.

READ MORE ↘

How Genetics is revolutionising oncologic care in prostate and bladder cancer

From predisposition to treatment and surveillance

Advancements in prostate cancer risk assessment

Enhancing precision and reducing unnecessary invasive procedures are key challenges in prostate cancer diagnosis. **Personalised risk assessment is crucial for early detection,** focusing on high-risk individuals for timely intervention. The Stockholm3 test combines protein markers, genetic markers and clinical data in a proprietary algorithm for the purpose of detecting aggressive prostate cancer at an early stage.

READ MORE ↘

Advancements in bladder cancer risk assessment

Current guidelines require lifelong, costly, and invasive cystoscopy for bladder cancer monitoring, impacting patients and healthcare systems. Non-invasive technologies are emerging to reduce reliance on cystoscopy, offering cost-effective alternatives for detection and surveillance. **The Bladder CARE™ test analyses urine for bladder cancer-specific DNA biomarkers using quantitative PCR, providing precise and sensitive results.**

READ MORE ↘

Precision oncology: next-generation sequencing in urological care

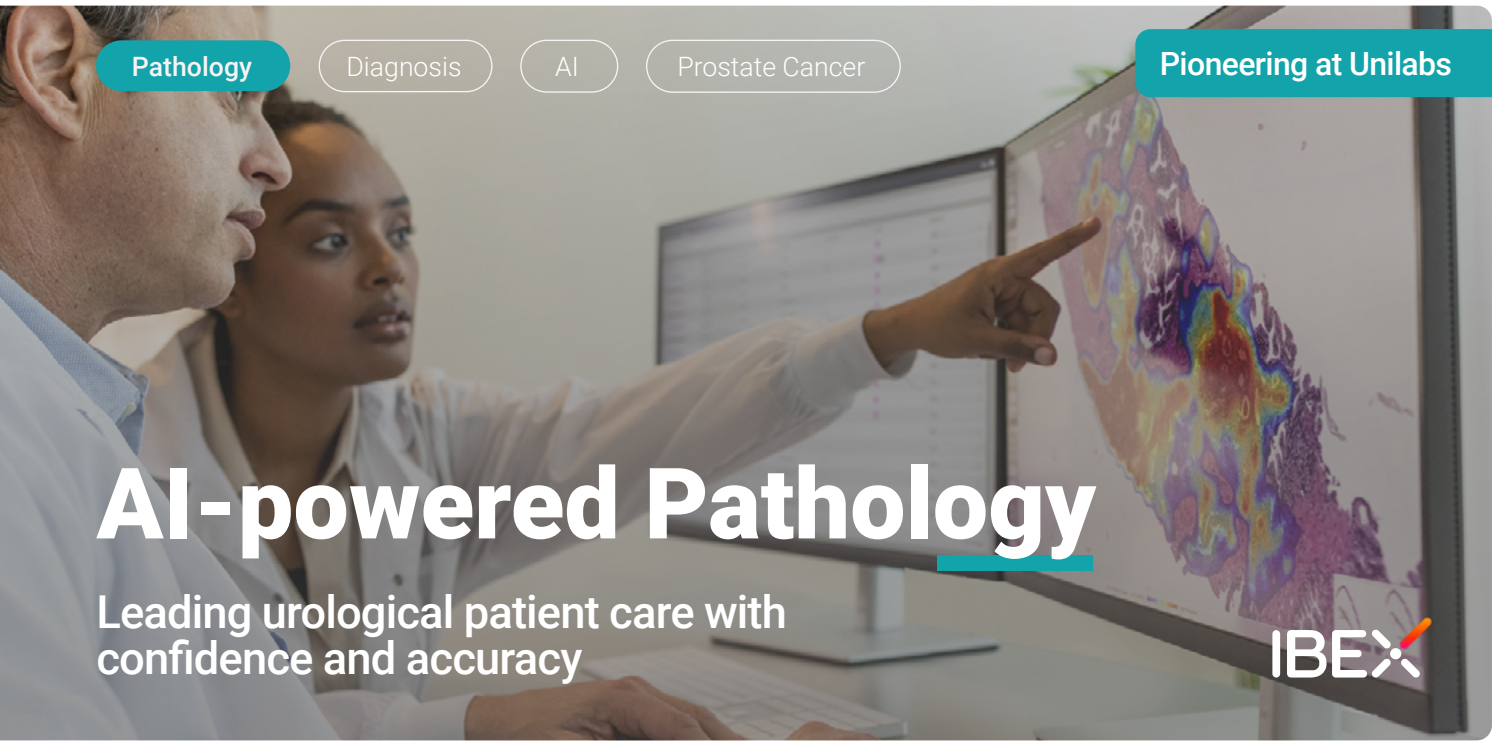
Traditional cancer diagnosis relies on histopathology and limited genetic testing, providing a narrow view of tumour genomics and slow results. Whole genome sequencing (WGS) and whole exome sequencing (WES) offer extensive data but are costly and complex. **Next-generation sequencing (NGS) panels target specific cancer-related genes,** enabling efficient mutation analysis, comprehensive tumour profiling, and assessment of hereditary factors for personalised treatment plans.

READ MORE ↘

Navigating critical questions in urological cancer care

Early detection of residual disease is crucial for effective urological cancer management, addressing critical questions such as: Does the patient need adjuvant chemotherapy? Is the cancer recurring? Is the treatment effective? Signatera™ is a **powerful tool in bladder cancer care, offering insights into disease status and enabling prompt, informed clinical decisions.**

READ MORE ↘



Pathological evaluation in prostate cancer

Pathological evaluation remains the cornerstone of cancer diagnosis and treatment planning. In prostate cancer, **the Gleason Score is a critical tool that categorises cancer cells based on their architectural patterns, with scores ranging from 6 to 10.** Higher scores indicate more aggressive cancer. Additionally, the NCCN Risk Classification stratifies prostate cancer into low, intermediate, and high-risk categories, guiding treatment decisions with tailored approaches for each risk group.

In 2016, the International Society of Urological Pathology (ISUP) introduced a refined grading system for prostate cancer to provide more precise prognostic information. This new system **classifies prostate cancer into five distinct Grade Groups based on the Gleason score:**

Grade Group 1: Gleason score ≤6 (3+3)
Grade Group 2: Gleason score 3+4=7
Grade Group 3: Gleason score 4+3=7
Grade Group 4: Gleason score 8 (4+4, 3+5, or 5+3)
Grade Group 5: Gleason score 9-10 (4+5, 5+4, or 5+5)

Gleason Score ISUP 2014	Grade Group	Gleason Pattern Gleason Score
	1	3+3=6
	2	3+4=7
	3	4+3=7
	4	4+4, 3+5, 5+3=8
	5	4+5, 5+4=9, 5+5=10

Source: Weinzerl | Visual Media © 2015 indiana university

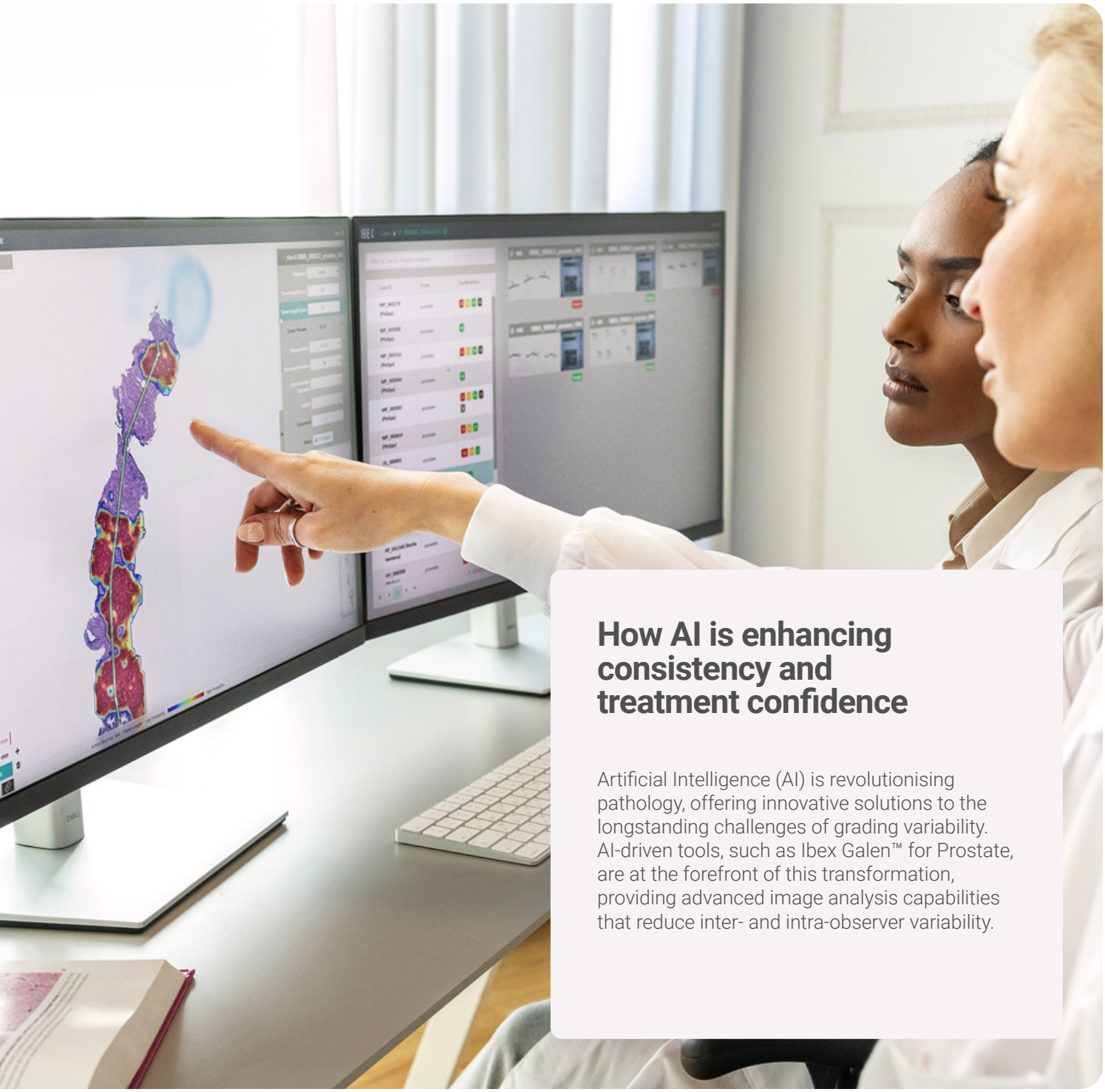
NCCN Prostate Cancer Risk Classification: Risk Groups

Very Low	Low	Intermediate	High	Very High
T1c	T1-T2a	T2b-T2c or	T3a or	T3b-T4 or
Gleason score ≤6/ Gleason grade group 1	Gleason score ≤6/ Gleason grade group 1	Gleason score 3+4=7/ Gleason grade group 2 or	Gleason score 8/ Gleason grade group 4 or	Primary Gleason pattern 5/ Gleason grade group 5 or
Fewer than 3 prostate biopsy cores positive, ≤%50 cancer in each core	PSA <10 ng/mL	Gleason score 4+3=7/ Gleason grade group 3 or	Gleason score 9-10/ Gleason grade group 5	>4 cores with Gleason score 8-10/ Gleason grade group 4 or 5
PSA <10 ng/mL		PSA 10-20 ng/mL	PSA >20 ng/mL	
PSA density <0.15 ng/ mL/g				

Current challenges in pathology grading

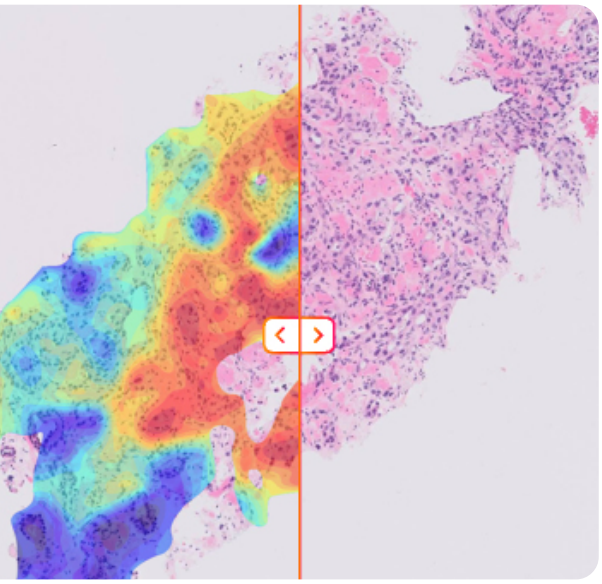
The 2016 update placed significant emphasis on improving the distinction between Gleason patterns, particularly between patterns 3 and 4, to reduce inter-pathologist variability. **Consistency in grading across different pathologists is crucial for reliable diagnosis and treatment planning.** The updated system promotes more uniform interpretations of tissue samples, thereby reducing discrepancies in prostate cancer grading and enhancing overall diagnostic reliability.

Despite advancements, **inter- and intra-observer variability among pathologists continues to pose significant challenges in prostate cancer grading,** affecting uniformity and impacting the reliability of treatment decisions. Discrepancies in grading not only influence clinical decisions but also have profound implications for patient prognosis.



How AI is enhancing consistency and treatment confidence

Artificial Intelligence (AI) is revolutionising pathology, offering innovative solutions to the longstanding challenges of grading variability. AI-driven tools, such as Ibex Galen™ for Prostate, are at the forefront of this transformation, providing advanced image analysis capabilities that reduce inter- and intra-observer variability.



Slide Production

Scanning

Galen Prostate

Pathologist Review & Report

Ibex Galen™ for Prostate utilises advanced machine learning algorithms to improve cancer grading accuracy and consistency, enhancing reliable diagnostic outcomes.

This technology transforms pathology practice by providing pathologists with a streamlined workflow and standardised data reporting. **Rigorous quality control measures aim at error-free diagnostics, leading to improved patient outcomes.** AI's ability to analyse extensive data rapidly and accurately enables personalised treatment plans based on the latest diagnostic information.

Benefits of Ibex Galen™ for Prostate

Enhanced diagnostic accuracy: enhances the accuracy of prostate cancer diagnosis, allowing urologists to make more confident treatment decisions.

Efficient workflow: The tool streamlines the diagnostic process, saving time for urologists and enabling them to focus more on patient care.

Comprehensive analysis: Provides detailed insights and comprehensive reports, aiding urologists in making informed treatment decisions.

Early detection: Facilitates the early detection of prostate cancer, leading to better patient outcomes and more effective treatment plans.

96%[1]
Sensitivity

89%[1]
Specificity

"Ibex Galen™ for prostate cancer acts as a valuable second set of eyes, reinforcing our diagnostic decisions. The AI's capability to identify subtle cancerous lesions enhances our confidence, aiming to ensure that our diagnoses are as thorough and accurate as possible. This support enables us to deliver the high quality care for our patients."

Dr. med. Guy Lesec
FMH Specialist in Pathological Anatomy

References:
1. Pantanowitz L, Quiroga L, Erdal BS, Schwartz M, Chen W, Liu C, et al. An artificial intelligence algorithm for prostate cancer diagnosis in whole slide images of core needle biopsies: a blinded clinical validation and deployment study. Lancet Digit Health. 2020;2(8) –e416.

Genetics | Diagnosis | Surveillance | Prostate Cancer

Advancements in prostate cancer risk assessment

Detect prostate cancer early with efficiency, accuracy and confidence

Stockholm^3

Currently, prostate-specific antigen (PSA) testing serves as the primary method for screening prostate cancer. PSA tests measure levels of a protein produced by the prostate gland, with elevated levels often indicating potential aggressive cancers that may require immediate intervention.

Challenges with current prostate cancer screening

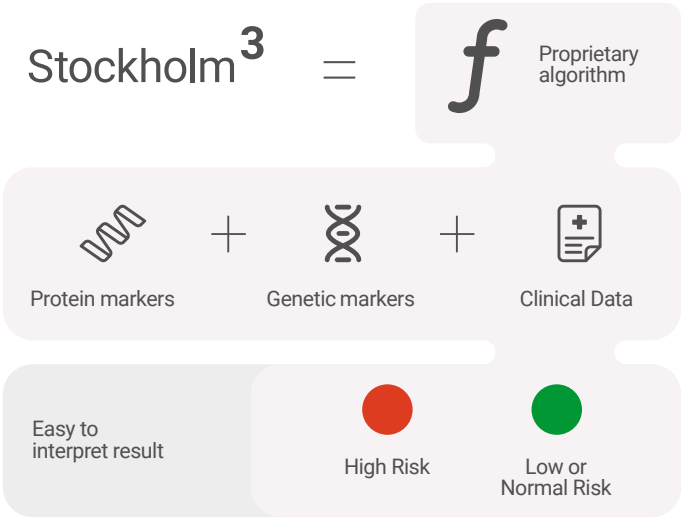
PSA testing, despite its widespread use, has significant limitations. It lacks specificity, and **can result in false positives that necessitate further invasive procedures** such as biopsies. Additionally, it struggles to differentiate between aggressive and non-aggressive cancers, potentially leading to overtreatment and uncertainty in treatment decisions.

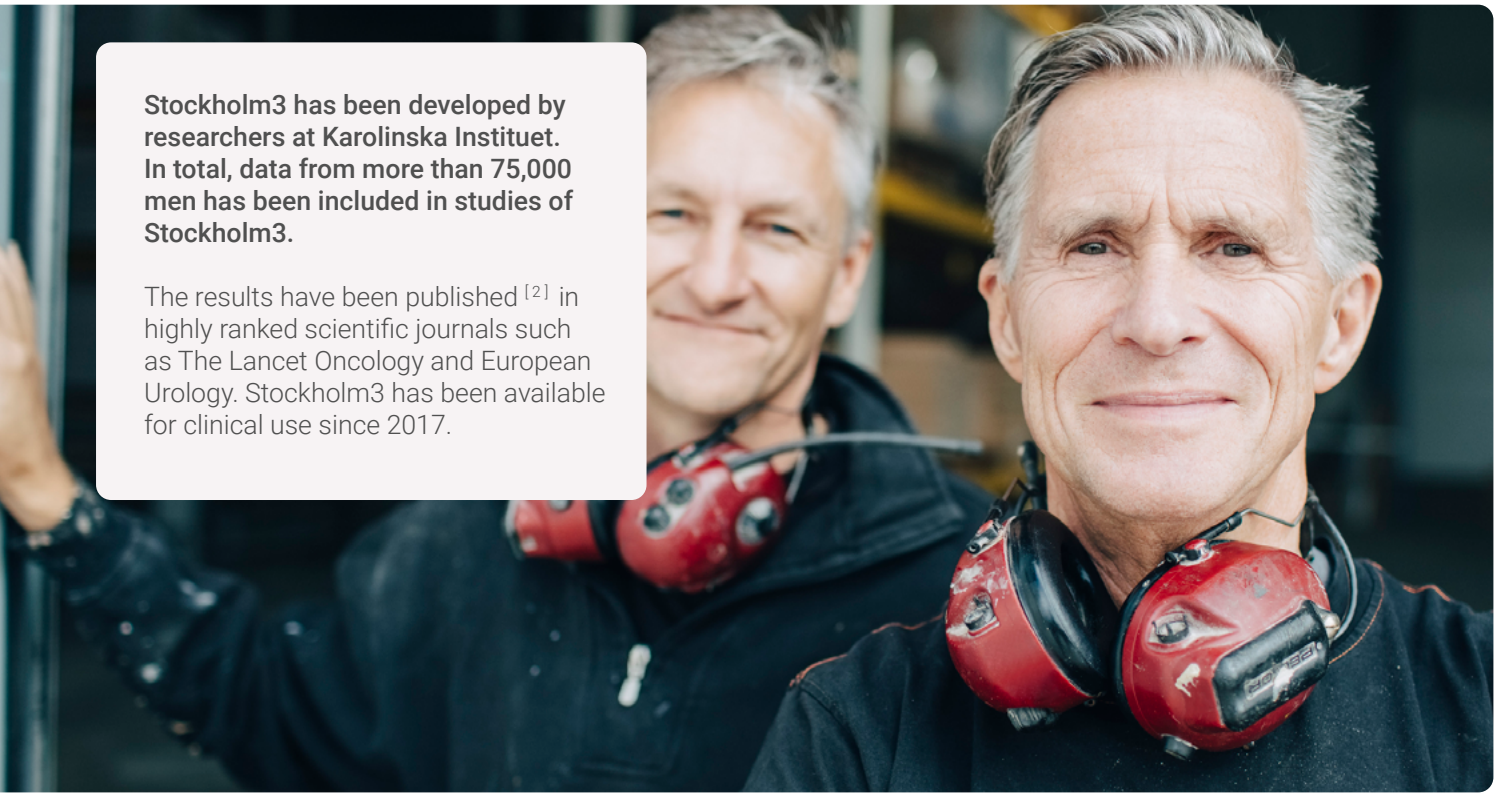
An alternative to PSA testing

The Stockholm3 test

The Stockholm3 test addresses the limitations of PSA testing by integrating PSA with three additional protein and genetic markers. Using advanced algorithms, it enhances accuracy in identifying aggressive prostate cancers and provides personalised risk assessments based on age, family history, and clinical data.

Unlike PSA testing, the **Stockholm3 test demonstrates superior sensitivity in detecting aggressive cancers, improving early diagnosis and treatment outcomes.** This advancement marks a significant step forward in prostate cancer screening, offering clearer risk stratification and guiding more informed treatment decisions.





Stockholm3 has been developed by researchers at Karolinska Instituet. In total, data from more than 75,000 men has been included in studies of Stockholm3.

The results have been published [2] in highly ranked scientific journals such as The Lancet Oncology and European Urology. Stockholm3 has been available for clinical use since 2017.

Results interpretation

Risk score

The Stockholm3 test presents a Risk Score indicating the probability of having aggressive prostate cancer. The result includes a percentage for the presence of clinically significant prostate cancer (Gleason Score ≥3+4=7 / ISUP ≥2).

Recommendations for further action

Stockholm3 offers clear recommendations for next steps.

High Risk
Referral to a urologist for further evaluation.

Low or Normal Risk
Repeat the test in 2 to 6 years

References:
2. A3P. Various publications and articles [Internet]. Available from: https://www.a3p.com/en/publications/
3. University of Zurich, Epidemiology, Biostatistics, and Prevention Institute (EBPI). Evaluating prostate cancer [Internet]. Available from: https://www.ebpi.uzh.ch/en/translational_research/chronic_conditions_health/evaluating_prostate_cancer.html.

Indication for Stockholm3

Stockholm3 is approved for men aged 45–74 years without a prior prostate cancer diagnosis[2].

General screening recommendations for prostate cancer [3] remain:

- ☑ **Men aged 50 and above**
  Consideration for those with a positive family history begins at age 45.
- ☑ **Upper age limit typically at 75,**
  but screening may be appropriate for biologically younger individuals.
- ☑ **Minimum life expectancy of 10 years.**
- ☑ **No prior diagnosis of prostate cancer.**

Additional criteria:

- ☑ **PSA < 1.5 ng/ml**
  Stockholm3 testing is not conducted.
- ☑ **PSA 1.5 – 20 ng/ml**
  Stockholm3 test is recommended.
- ☑ **PSA > 20 ng/ml**
  Immediate referral to a urologist for evaluation.

The risk of prostate cancer below a PSA level of 1.5 ng/ml is very low. PSA levels exceeding 20 ng/ml usually require further investigation.

Benefits of Stockholm3

Early detection: Identifies aggressive carcinomas even at low PSA levels, enabling timely intervention and better prognosis.[2]

Reduced overdiagnosis: Helps ensuring biopsies are only conducted when clinically necessary. [2]

Clear risk assessment: Delivers clear recommendations for interpreting results and planning diagnostics, facilitating actionable next steps.

Scientific validation: Supported by robust clinical trials and validation studies involving over 75,000 men.

Proven clinical application: Successfully used in Sweden and Norway since 2017.

Recognition: Included in the American Association of Urology (AUA) guidelines since 2023 as the primary test for early prostate cancer detection.

"The Stockholm3 test is an exceptional tool in genetic risk assessment. It allows us to detect aggressive prostate cancer early, even at low PSA levels. This precise risk assessment enables us to offer better, targeted care for our patients."

Dr. Pierre-Alain Menoud
FAMH in medical genetics

Step by Step

How to prescribe Stockholm3

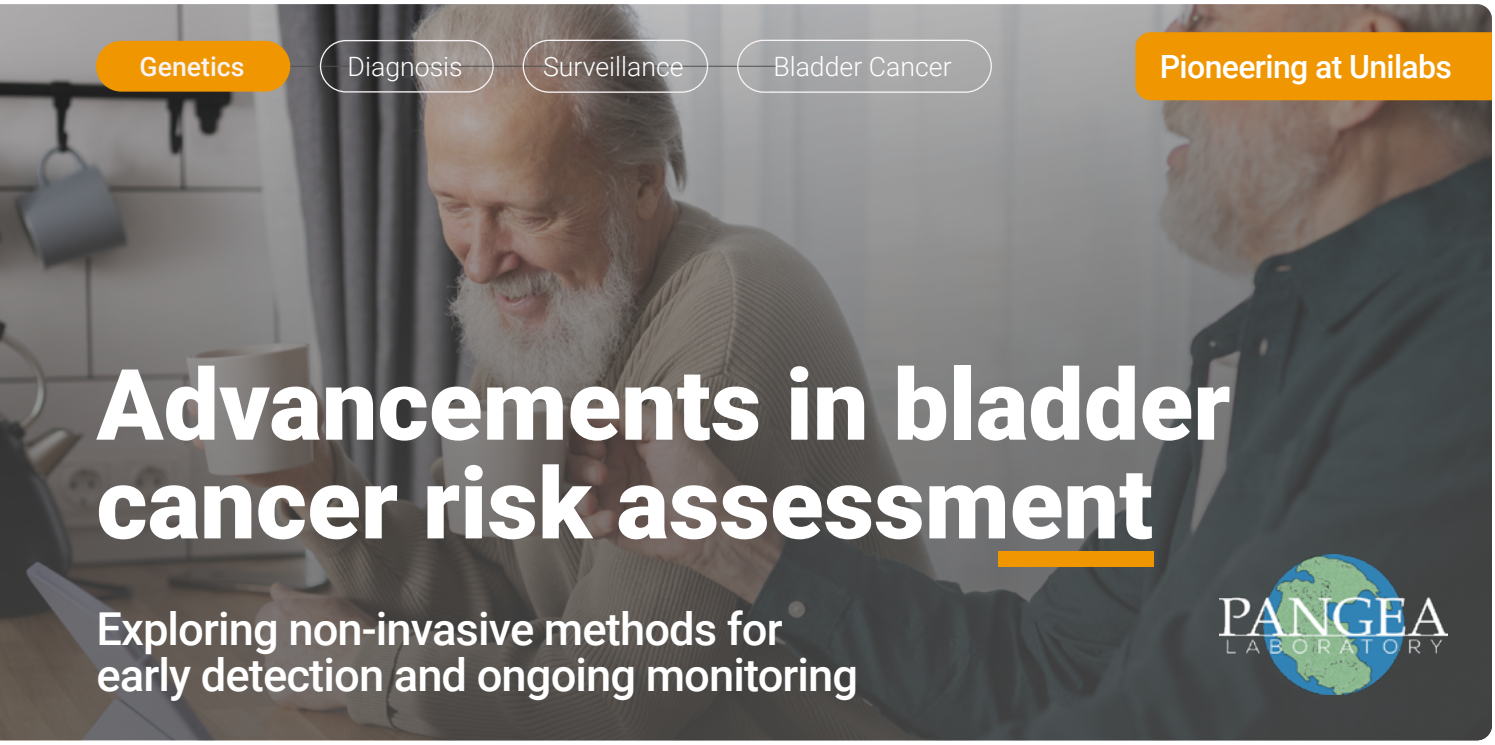
1. Download the Stockholm3 demand form on **www.unilabs.ch/fr/360-urology-download.**
2. Fill out demand form with questionnaire about the patient.
3. Send samples to the lab. Clear instructions and lab address can be found on the demand form. If you have any questions contact **shared.ch.secretariat.genetics@unilabs.com.**
4. Reports are shared electronically.
5. Appointment for result discussion with the patient.

Price & reimbursement

Price
502.- CHF

Reimbursement
Please ask your patients to consult their health insurance with regard to reimbursement questions. If the health insurance declines coverage, your patients are responsible for paying the price of the test.

References:
2. A3P. Various publications and articles [Internet]. Available from: https://www.a3p.com/en/publications/



Genetics | Diagnosis | Surveillance | Bladder Cancer

Pioneering at Unilabs

Advancements in bladder cancer risk assessment

Exploring non-invasive methods for early detection and ongoing monitoring

PANGEA LABORATORY

The standard approach to diagnosing and monitoring bladder cancer primarily involves invasive procedures, notably cystoscopy. This method uses a flexible scope to visually examine the bladder, which, while effective, is uncomfortable, costly, and burdensome for both patients and healthcare systems. Its invasiveness can lead to patient discomfort, complications, and significant financial costs.

Challenges with current diagnostic methods

Lifelong surveillance is essential for managing bladder cancer due to its high recurrence rates, necessitating frequent cystoscopies. Despite its effectiveness, **cystoscopy's invasiveness and associated discomfort often deter patient compliance with follow-up appointments.** Moreover, its resource-intensive nature—requiring specialised equipment, trained personnel, and dedicated facilities—contributes significantly to high costs and logistical challenges.

Addressing surveillance needs with non-invasive methods

In response to these challenges, non-invasive methodologies are becoming crucial to streamline diagnostic workflows and enhance patient outcomes. **Recent advancements, such as Bladder CARE™, offer a non-invasive approach to detect bladder cancer biomarkers from urine samples.** This quantitative test measures the methylation levels of three specific DNA biomarkers associated with the disease. Bladder CARE™ can be utilised in several settings, in outpatient clinics, hospitals, and specialised diagnostic laboratories.

Extraction of urine DNA

Detection of epigenetic signature of bladder cancer

Results: Bladder CARE™ Index

Understanding DNA methylation and bladder cancer biomarkers

DNA methylation is an epigenetic modification where methyl groups are added to DNA, altering gene expression without changing the DNA sequence. **Abnormal methylation patterns are common in cancer cells, including those in bladder cancer.** Biomarkers are specific DNA regions characterised by these abnormal methylation patterns, serving as indicators for the presence of bladder cancer cells. **Key biomarkers used in bladder cancer detection, such as TRNA-Cys, SIM2, and NKX1-1, are targeted by diagnostic assays like Bladder CARE™ for their diagnostic relevance.** Bladder CARE™ uses quantitative PCR (Polymerase Chain Reaction) to quantify the methylation levels of these biomarkers in urine samples. PCR amplifies and measures the DNA segments associated with bladder cancer, aiding precise detection.

93.5%
Sensitivity

92.6%
Specificity

87.8%
Positive predictive value

96.2%
Negative predictive value

Clinical studies [4] performed demonstrated high sensitivity (93.5%) and specificity (92.6%), validating its efficacy in early detection and monitoring.

Benefits of Bladder CARE™

Non-invasive detection: Enables detection from urine samples, reducing patient discomfort and anxiety associated with invasive procedures.

Convenient surveillance: Facilitates the collection of a simple urine sample at the doctor's office, enhancing patient convenience and potentially improving compliance with surveillance protocols.

Precision and reliability: Offers quantitative PCR results that accurately measure biomarker methylation levels, aiding in precise diagnostics and treatment monitoring.

"Bladder CARE™ provides us with a reliable method for assessing bladder cancer risk and monitoring patients post-treatment. By analysing specific biomarkers, we can detect cancer early and monitor recurrence, which is crucial for timely intervention and effective patient management."

Dr. Mattia Schmid
FAMH in medical genetics

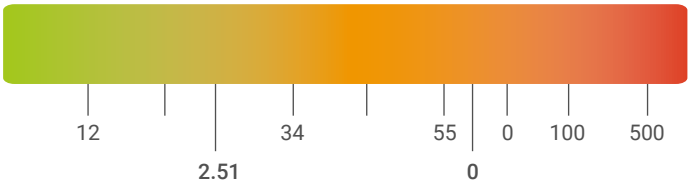
References:
4. Piatti P, Chew YC, Suwoto M, et al. Clinical evaluation of Bladder CARE, a new epigenetic test for bladder cancer detection in urine samples. Clin Epigenet. 2021;13:84. doi: 10.1186/s13148-021-01029

Results interpretation

Bladder CARE™ results are interpreted using a proprietary algorithm, Bladder CARE™ Index (BCI), which indicates the abundance of cancer DNA present in the urine sample.

Bladder CARE™ Index (BCI) Values

BCI < 2.5	BCI 2.5 -10	BCI >10
Negative	**High Risk**	**Positive**



Bladder CARE ™ a good candidate for

- [x] **Early Detection** and possibly for the routine screening and surveillanc of bladder cancer patients.[4]

Step by Step

How to prescribe Bladder CARE™

1. Download the Bladder CARE™ demand form on **www.unilabs.ch/fr/360-urology-download**
2. Fill out the demand form with questionnaire about the patient.
3. Your patient can do the Bladder CARE™ test at your office. Instruct the patient on how to collect the urine sample during their visit using the provided kit.
4. Send urine sample according to provided instructions on demand form and use the pre-paid return label.
5. Reports are shared electronically.
6. Appointment for result discussion with the patient.

Price & Reimbursement

Estimated Price
CHF 450.-

Reimbursement
Bladder CARE™ is reimbursed by health insurance (Tarmed)

References:
4. Piatti P, Chew YC, Suwoto M, et al. Clinical evaluation of Bladder CARE, a new epigenetic test for bladder cancer detection in urine samples. Clin Epigenet. 2021;13:84. doi: 10.1186/s13148-021-01029-1.

Genetics | Predisposition | Treatment and Therapy | Surveillance

Next-Generation Sequencing Panels in cancer care

Accurate and comprehensive diagnosis for prognostic evaluation and targeted therapies

Traditionally, cancer diagnosis relied on histopathological examination and limited molecular tests targeting specific genetic alterations, which are labour-intensive and provide a narrow view of the tumour's genomic landscape. These methods **can fail to capture the full spectrum of mutations influencing cancer progression and treatment response.** Whole genome sequencing (WGS) and whole exome sequencing (WES) offer comprehensive genomic information but can be costly and generate a lot of data.

Precision oncology insights: leveraging NGS Panels

NGS panels, also known as targeted sequencing or gene panels, **focus on predefined sets of genes or genomic regions associated with diseases like cancer.** Unlike whole genome sequencing (WGS) or whole exome sequencing (WES), which sequence the entire genome or exome respectively, **this selective approach enables rapid, cost-effective analysis of clinically relevant mutations.** This, in turn, guides personalised treatment decisions and improves patient outcomes in oncology.

Providing insights at every step of the patient's journey

- **Predisposition and mutation detection:** NGS panels identify cancer-driving mutations, guiding precise treatment decisions and enhancing diagnostic accuracy.
- **Targeted therapy and treatment monitoring:** Pinpoint mutations for tailored therapies and monitor treatment response, detecting resistance mutations early.
- **Surveillance and evolution monitoring:** Enable early recurrence detection and track genomic changes, informing effective cancer surveillance and treatment strategies.

Predisposition | Therapy & treatment | Surveillance

Hereditary cancer genetic testing

Genetic testing for hereditary cancer is transforming precision diagnostics in urology. By targeting over 1000 genes, these tests identify inherited mutations that significantly elevate the risk of developing various cancers. **This approach enables healthcare providers to offer personalised screening and preventive strategies to individuals with a heightened genetic predisposition to cancer.**

Hereditary cancer syndromes covered

- ☑ Hereditary leiomyomatosis and renal cell cancer
- ☑ Hereditary prostate cancer
- ☑ Various rare cancer syndromes

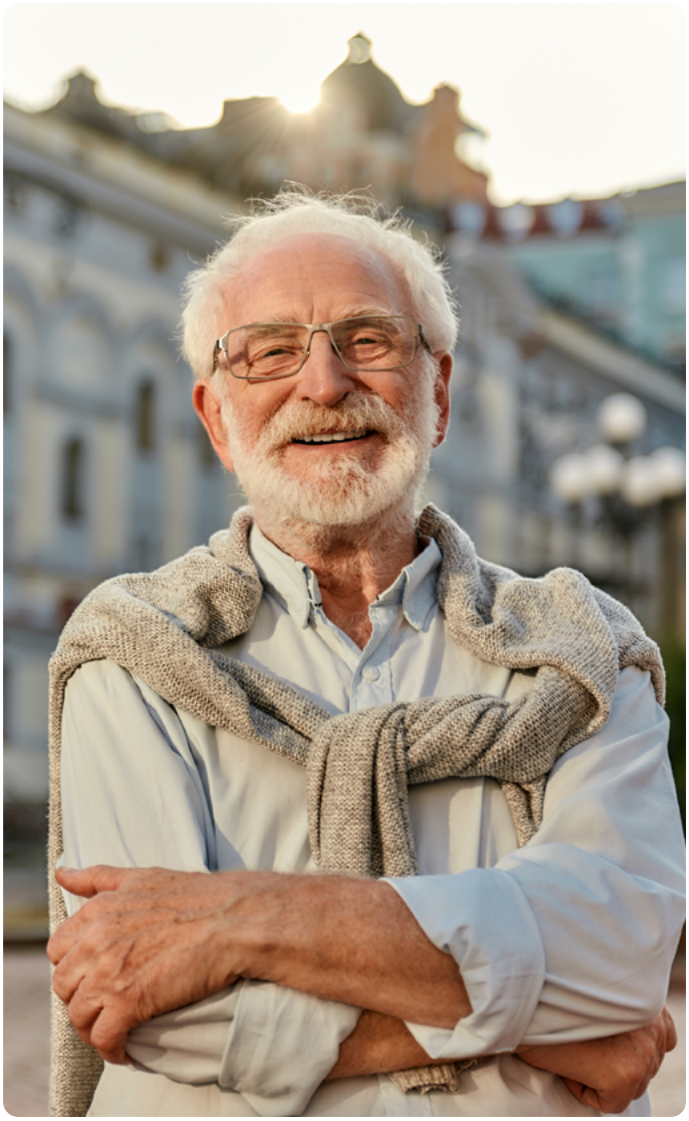
Benefits of hereditary NGS panels

Identification of inherited mutations: Targets a broad spectrum of genes, informing personalised screening and prevention strategies.

Precision screening and preventive strategies: Offers tailored screening protocols and preventive measures for individuals at elevated risk.

Family counselling and risk assessment: Empowers informed decision-making for testing, surveillance, and lifestyle modifications.

Integration into clinical practice: Enhances diagnostic accuracy and management of hereditary cancer syndromes.



Predisposition | Therapy & treatment | Surveillance

Tumour profiling

Tumour profiling has advanced significantly with specialised Next-Generation Sequencing (NGS) panels, offering tailored insights into cancer genomics across various clinical settings. **Core Cancer Panels provide targeted genetic analysis within specific cancer types or pathways, aiding precise treatment selection and monitoring. Pan-Cancer Profiling extends this to identify shared genomic alterations across multiple cancer types, enhancing personalised treatment strategies**. Together, these NGS panels are revolutionising cancer understanding and management, advancing the era of precision medicine.

Core cancer panels: focused genetic insights for specific cancer types

Core cancer panels use NGS technology to target specific genes crucial to certain cancers. **This focused approach helps clinicians select optimal therapies and monitor treatment response,** offering a cost-effective alternative to broader genomic assays. The detailed genetic information supports personalised treatment plans.

	Prostate cancer core panel	Bladder cancer core panel
DNA based genes tested	125	54
RNA based gene fusions tested	42	44
MSI analysis	Assessment of 26 independent loci	Assessment of 26 independent loci

Benefits of tumour profiling

Focused genetic profiling: Targets critical genes in specific cancer types or pathways, enabling detailed analysis of key mutations and alterations.

Clinical utility: Identifies specific mutations relevant to a cancer type, aiding in therapy selection and treatment monitoring.

Cost-effectiveness: More economical than broader genomic assays, suitable for routine clinical use in oncology.

Personalised medicine: Provides detailed genetic information for tailored treatment plans based on tumour molecular profiles.

Pan-cancer profiling: comprehensive genetic insights across multiple cancer types

Pan-cancer profiling uses NGS technology to evaluate frequently mutated genes and genomic abnormalities across various cancers. It is especially valuable when the primary tumour origin is uncertain or in rare, aggressive cancers. **By analysing a broad spectrum of genomic alterations, it enables personalised treatment plans based on actionable mutations, enhances eligibility for targeted clinical trials, and supports dynamic monitoring of disease progression and treatment response.** Additionally, it advances cancer genomics research by identifying common pathways and potential new therapeutic targets across multiple cancer types.

Pan-cancer profiling

DNA based genes tested	523
RNA fusions	56 Extensive MSI (26 loci TMB (Tumor Mutation Burden)

Benefits of pan-cancer profiling

Tumor origin identification: Pinpoints the origin of cancers with unknown primary sites by analysing common driver mutations.

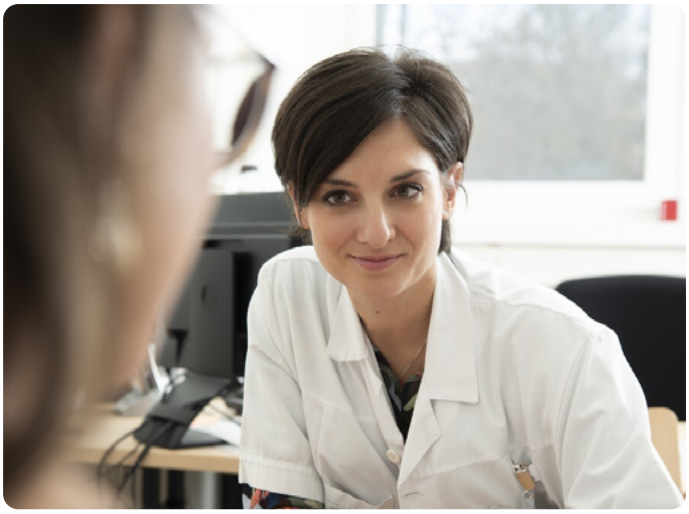
Therapeutic insights for rare and aggressive cancers: Identifies treatment targets across cancer types, useful for rare or resistant cancers.

Comprehensive genomic analysis: Provides broad insights into genomic alterations beyond specific tumour types.

Personalised treatment approaches: Identifies actionable mutations for tailored therapies and treatment options.

Monitoring disease progression: Tracks mutations to monitor disease progression, treatment response, and recurrence.

Advancing cancer research: Identifies common pathways and potential new therapeutic targets across multiple cancer types.



> "Our NGS panels for hereditary cancers allow to identify individuals with a high risk of developing certain types of cancers in order to offer them the adequate surveillance. Before and after testing, genetic counselling helps patients to understand and adjust to the possible tests results and their implications.
> On the other hand, tumour profiling provides detailed genetics insights that are important for personalised treatment outcomes."

Dr. Marie Met-Domestici
Senior Certified Genetic Counsellor

Step by Step

How to prescribe NGS Panels

1 Download the Oncogenetics demand form on **www.unilabs.ch/fr/360-urology-download.**

2 If the patient fits the indication, request the wished NGS panel on the demand form.

3 Send samples to the Unilabs Genetics lab in **Rue de la Vigie 5, 1003 Lausanne.** If you have any questions contact **shared.ch.secretariat.genetics@unilabs.com.**

4 Reports are shared electronically.

5 Appointment for result discussion with the patient.

Price & reimbursement

Price
Tarmed

Genetics | Bladder Cancer | Surveillance

Pioneering at Unilabs

Navigating critical questions in urological cancer care

Residual disease detection for enhanced confidence in clinical decisions

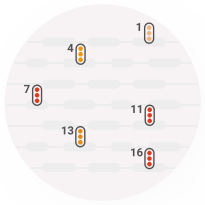
natera™ | Signatera™ Residual disease test (MRD)

Cell-free circulating tumour DNA (ctDNA) has emerged as a promising non-invasive cancer biomarker for monitoring disease status of cancer patients. It consists of short nucleic acid fragments released into the systemic circulation as a result of tumour cell apoptosis and/or necrosis, providing important information on the unique genomic profile of every neoplasia.

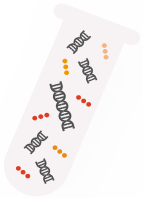
+ ctDNA is a powerful biomarker that can be measured to assess the absence or presence of molecular residual disease (MRD)

+ ctDNA contains a mutational context (pilot and transient mutations) that can be linked to the initial tumour profile.

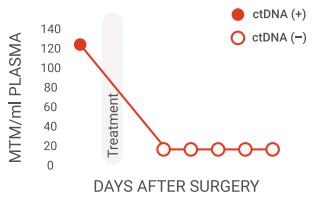
+ Dynamic biomarker: active molecular monitoring of tumor evolution in relation to the clinical context.



Whole exome sequencing and individualised selection of 16 clonal, somatic variants



Patient-specific primer design and multiplex PCR assay plus next generation sequencing

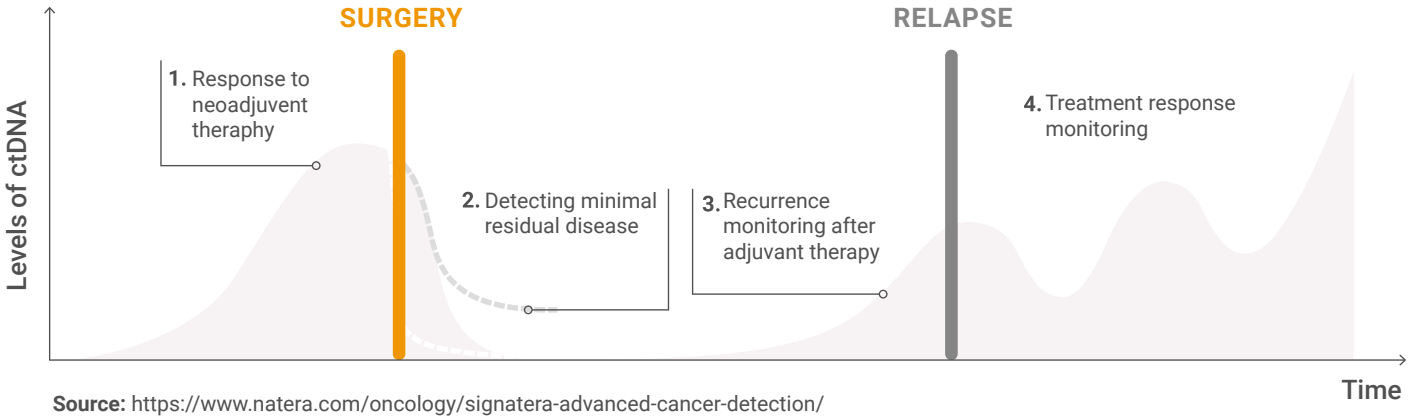


Longitudinal monitoring for the presence of ctDNA

Signatera™ leverages the unique mutation signature of each patient's tumour to identify and track tumour-specific variants. **By designing a personalised assay, it uses a patient's blood to monitor the presence or absence of the disease over time with high accuracy,** guiding therapies and monitoring response in a timely manner.

Signatera™ tracks 16 clonal variants based on whole exome sequencing (WES) of tumour tissue and matched normal blood. This process identifies specific DNA biomarkers of the tumour, providing precise and individualised monitoring. It can guide ultra-sensitive MRD detection at VAFs as low as 0.01% by tracking 16 ctDNA specific markers (>99% of cases).[5]

References:
5. Natera. Various publications [Internet]. Available from: https://www.natera.com/resource-library/natera-publications/.



Source: https://www.natera.com/oncology/signatera-advanced-cancer-detection/

Signatera™ clinical applications	Why tumour-informed MRD?
1. Neoadjuvant response monitoring	Tailor neoadjuvant treatment or surgical strategies to patient's specific needs
2. Postsurgical MRD assessment	Identify patients who may or may not benefit from adjuvant therapy
3. Recurrence monitoring	Triage indeterminate nodules; rule in/rule out disease recurrence
4. Assess treatment effectiveness	Monitor ctDNA kinetics (increase or decrease in ctDNA levels) to quickly identify if there is any response to treatment

Clinical management and follow-up after Signatera™ testing

Longitudinal changes in Signatera™ ctDNA status

ctDNA status post-surgery/pre-intervention	Intervention	ctDNA status post-intervention	Interpretation	
+ Positive	Radiation Chemotherapy	Negative or decreasing positive	Likely response to treatment	High relapse risk
+ Positive	Targeted therapy Immunotherapy	Increasing positive	Less likely response to treatment	
— Negative	Observation	— Negative	No residual disease detected. Continue to monitor	
— Negative	Observation	+ Positive	Molecular relapse detected	

Source: Signatera™ Pan Tumour Guide Brochure

Benefits of Signatera™

Detects molecular residual disease at any point for **greater confidence in clinical decisions.**

The custom ctDNA test that provides early knowledge with a **>99.5% clinical test specificity.**[5]

Delivers **higher sensitivity and specificity** [5] in detection of MRD versus conventional monitoring tools and static, liquid-biopsy panels.

Predictive of eventual clinical relapse and unfavorable clinical outcomes with a positive test result.

Enables **monitoring of molecular disease status** at diagnosis and throughout the continuum of cancer care.

"Signatera™ has transformed how we monitor molecular residual disease. Its ability to detect ctDNA with high sensitivity allows us to track the disease's progression or recurrence with great accuracy. This early detection is key to adjusting treatment plans promptly, ultimately benefiting patient outcomes."

Dr. Konstantinos Nikopoulos
FAMH in medical genetics

Step by Step

How to prescribe Signatera™

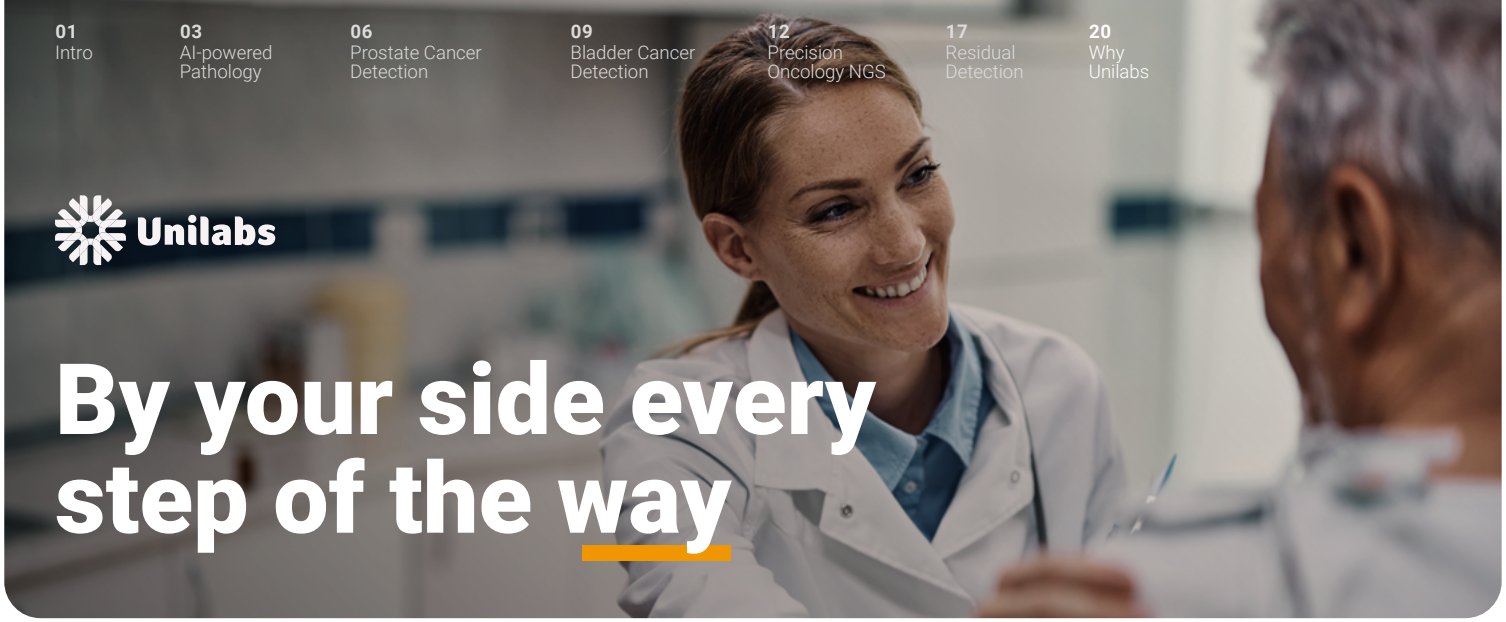
1. Download the Oncogenetics demand form on **www.unilabs.ch/fr/360-urology-download.**
2. If the patient fits the indication, choose the Signatera™ test on the demand form.
3. Please follow the instructions for the samples / kit which you can also find on **www.unilabs.ch/oncogenetics**. Feel free to contact **shared.ch.secretariat.genetics@unilabs.com** if you have any questions or doubts.
4. Reports are shared electronically.
5. Appointment for result discussion with the patient.

Price & reimbursement

Price
Set-Up: 3800.- CHF
Follow-Up: 2100.- CHF

Reimbursement
Signatera™ is reimbursed by health insurance (Tarmed)

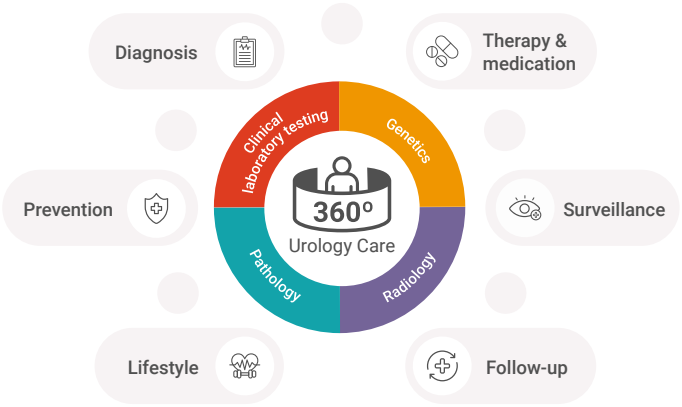
References:
5. Natera. Various publications [Internet]. Available from: https://www.natera.com/resource-library/natera-publications/.



Unilabs

By your side every step of the way

Four ways to diagnose, one way to care



Since our foundation in 1987 in Switzerland, Unilabs has grown into a leading diagnostics provider, combining clinical lab testing, genetics, pathology, and radiology under one roof to meet your needs. With a comprehensive portfolio spanning all histological and cytological specialties, we provide the diagnostic tools and insights required for informed, timely, and reliable clinical decisions.

We also offer interdisciplinary tumour boards for complex cases, ensuring you have the support needed for the best patient care. Our extensive network and on-demand consultations enhance your decision-making, allowing you to deliver high-quality, personalised care. **At Unilabs, we are here to support you every step of the way with our expertise and integrated solutions for optimal patient outcomes.**

Collaborative expertise network

Within our extensive **European network of over 300 specialists working in multidisciplinary teams,** we provide you with comprehensive, actionable insights to improve urological diagnoses and support your practice.

+30 years
experience

+200 labs
worldwide

+100 specialists
dedicated genetics team

+4,000 genetic tests
services portfolio

Efficiency & accessibility

Efficiently **delivering high-quality results through cutting-edge automation and state-of-the-art equipment,** including digital pathology for remote consultations and case reviews. Our advanced digital pathology solutions ensure you receive timely and accessible diagnostic information.

Profit from our extensive network and expertise

unilabs.switzerland.communications@unilabs.com