Providing Treatment Information for Prostate Cancer Patients

**BIOPSY**
For all patients with localized disease on biopsy

**POST OP**
For all patients with adverse pathology after prostatectomy

See what *better* looks like

Contact the GenomeDx Customer Support Team
1.888.792.1601 (toll-free)
customersupport@genomedx.com
Decipher provides better risk assessment for more individualized treatment for all patients diagnosed with localized prostate cancer.

Decipher predicts the likelihood of clinically useful endpoints:

- High Grade Disease (Gleason Grade 4 or 5)
- 5 year metastasis
- 10 year prostate cancer specific mortality*

<table>
<thead>
<tr>
<th>Decipher Classification</th>
<th>Patient Management Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decipher Biopsy Low Risk</strong></td>
<td>Favorable prognosis - may be suitable candidate for active surveillance and may have excellent outcomes when treated with local therapy alone(^{5,6})</td>
</tr>
<tr>
<td><strong>Decipher Biopsy High Risk</strong></td>
<td>Unfavorable prognosis - may not be suitable candidate for active surveillance and may benefit from intensification with multi-modal therapy(^{5,6})</td>
</tr>
</tbody>
</table>

Decipher Biopsy accurately reclassifies 46% of patients from NCCN risk category\(^{7}\)

*Extrapolated from multiple radical prostatectomy Decipher studies.\(^{1,2,3,6}\)
Decipher® Biopsy is the most accurate predictor of disease progression for newly diagnosed patients.

Decipher Biopsy alone predicts metastasis with an AUC of 0.87 and independently outperforms other clinical risk factors.

Comparison of Accuracy for Predicting Metastasis
Predictive Power Measured by Area Under the Curve (AUC)³

- Decipher alone (5 yr mets) 0.87
- Decipher alone (10 yr mets) 0.80
- Pretreatment PSA (5 yr mets) 0.67
- Biopsy GS (5 yr mets) 0.51

Comparison of Accuracy for Predicting High Grade Disease
Predictive Power Measured by Area Under the Curve (AUC)³

- Decipher alone (High Grade Disease) 0.71
- Oncotype + NCCN (High Grade Disease) 0.69
- Pretreatment PSA (High Grade Disease) 0.62

References

Decipher Biopsy Report

**Patient Details:**
- Patient Name: 
- Medical Record Number: 
- Date of Birth: 03/03/1957
- Date of Biopsy: 

**Pathology Laboratory:**
- Pathologist: 
- Address: 

**Order Information:**
- Order Date: 
- Specimen Received Date: 
- GenomeDx Accession ID: 
- Specimen ID: 
- Ordering Physician: 
- Clinic/Hospital Name: 
- Clinic/Hospital Address: 

**Clinical Details:**
- PSA, most recent (ng/mL): 10
- % Biopsy Cores Positive: 25
- NCCN risk category: Intermediate Risk
- Clinical stage: T1c
- Biopsy Gleason Score: 3+3

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**Your Decipher Result – Genomic Low Risk**

**Decipher Score 0.26**

- **Risk at RP - Percent Likelihood**
  - High Grade Disease (primary Gleason grade 4 or 5): 13.5%
  - 5-Year Metastasis: 1.2%
  - 10-Year Prostate Cancer Specific Mortality: 2.1%

**Interpretation**

Among men with a low risk Decipher prostate cancer classifier score clinical studies have shown that this cancer has a favorable prognosis. Men with low risk Decipher score may be suitable candidates for active surveillance and may have excellent outcomes even when treated with local therapy alone.1 3

**References on reverse**

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*Average clinical risk refers to the average cohort risk of metastasis at 5 years post radical prostatectomy (RP). The average cumulative incidence of metastasis was 6.0% at 5 years post radical prostatectomy, as reported by Wane et al., 2013 from a cohort of 1,010 men with intermediate and high risk clinical features who received radical prostatectomy as first line treatment at the Mayo Clinic between 2000 and 2006.5

1 Probability of high grade disease (primary Gleason grade 4 or 5) endpoint: Decipher uses the genomic risk score to predict the probability of primary Gleason grade 4 or 5 disease upon pathologic examination of the radical prostatectomy. Probabilities were generated using a logistic regression model in a prospective cohort of 7,342 prostate cancer patients. The model is adjusted using a prevalence of 2% for a finding of primary Gleason grade 4 or 5 on radical prostatectomy among NCCN low-, intermediate- and high-risk patients.7 Klein et al. 2016 study found Decipher Biopsy predicted high grade disease at radical prostatectomy with an AUC of 0.71. The percent likelihood for this endpoint ranges from 6.5-62.5.

2 Five-year probability of metastasis endpoint: Decipher uses the genomic risk score to predict the 5-year probability of metastasis from the time of radical prostatectomy. Probabilities were generated from a Cox proportional hazards model based upon a cohort of 1,010 men with intermediate and high risk clinical features with a median 10.9 years of follow up.8 Klein et al. 2016 reported that Decipher Biopsy predicted 5-year metastasis with an AUC of 0.87. The percent likelihood for this endpoint ranges from 0.3-67%.

3 Ten-year probability of prostate cancer specific mortality (PCSM) endpoint: Decipher uses the genomic risk score to predict the 10-year probability of PCSM from the time of radical prostatectomy. Probabilities are generated from a logistic regression analysis based upon a cohort of 537 patients with 223 prostate cancer deaths within 10 years post radical prostatectomy. These probabilities are adjusted for a PCSM cumulative incidence of 5% at 10 years post radical prostatectomy. All non-PCSM patients in the study had at least 10 years of follow up. Decipher had an AUC of 0.72 in predicting PCSM.9 Percent likelihood for this endpoint ranges from 0.7-30.5%. This risk model has not yet been validated on prostate biopsy specimens but has been validated in multiple radical prostatectomy Decipher studies.10

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GenomeDx Medical Director (Name & Signature)
Medical Directors: Timothy J. Triche, MD, PhD | Doug Dalginow, MD

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**CLIA ID # 05D0055897**

Page 1 of 2
Decipher Biopsy Report

Patient Details:
- Patient Name:
- Medical Record Number:
- Date of Birth: 03/03/1950
- Date of Biopsy:

Pathology Laboratory:
- Pathologist:
- Address:

Order Information:
- Order Date:
- Specimen Received Date:
- GenomeRx Accession ID:
- Specimen ID:
- Ordering Physician:
- Clinical/Hospital Name:
- Clinical/Hospital Address:
- Additional Physician:

Clinical Details:
- PSA, most recent (ng/mL): 3.9
- % Biopsy Cores Positive: 20
- NCCN risk category: Low Risk
- Clinical stage: T1c
- Biopsy Gleason Score: 3+3

Your Decipher Result – Genomic High Risk

Decipher Score 0.70

Risk at RP - Percent Likelihood

- High Grade Disease (primary Gleason grade 4 or 5): 43.3%
- 5-Year Metastasis: 16.4%
- 10-Year Prostate Cancer Specific Mortality: 11.4%

Interpretation

Among men with a high risk Decipher prostate cancer classifier score clinical studies have shown that this cancer has an unfavorable prognosis. Men with a high risk Decipher score may not be suitable candidates for active surveillance and may benefit from intensification with multi-modal therapy.1-3

References on reverse

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1 Average clinical risk refers to the average cohort risk of metastasis at 5 years post radical prostatectomy (RP). The average cumulative incidence of metastasis was 6.0% at 5 years post radical prostatectomy, as reported by Kupesic et al., 2013 from a cohort of 1,010 men with intermediate and high risk clinical features who received radical prostatectomy as first line treatment at the Mayo Clinic between 2000 and 2006.

2 Probability of high grade disease (primary Gleason grade 4 or 5) endpoint: Decipher uses the genomic risk score to predict the probability of primary Gleason grade 4 or 5 disease upon pathologic examination of the radical prostatectomy. Probabilities were generated using a logistic regression model in a prospective cohort of 2,342 prostate cancer patients. The model is adjusted using a prevalence of 25% for a finding of primary Gleason Grade 4 or 5 on radical prostatectomy among NCCN low, intermediate- and high-risk patients. Klein et al. 2016 study found Decipher biopsy predicted high grade disease at radical prostatectomy with an AUC of 0.71. The percent likelihood for this endpoint ranges from 6.5-91.5.

3 Five-year probability of metastasis endpoint: Decipher uses the genomic risk score to predict the 5-year probability of metastasis from the time of radical prostatectomy. Probabilities were generated from a Cox proportional hazards model based upon a cohort of 1,010 men with intermediate and high risk clinical features with a median of 6.9 years of follow-up. Klein et al. 2016 reported that Decipher biopsy predicted 5-year metastasis with an AUC of 0.87. The percent likelihood for this endpoint ranges from 0.3-47%.

4 Ten-year probability of prostate cancer specific mortality (PCSM) endpoint: Decipher uses the genomic risk score to predict the 10-year probability of PCSM from the time of radical prostatectomy. Probabilities are generated from a logistic regression analysis based upon a cohort of 557 patients with 112 prostate cancer deaths within 10 years post radical prostatectomy. These probabilities are adjusted for a PCSM cumulative incidence of 5% at 10 years post radical prostatectomy. All non-PCSM patients in the study had at least 10 years of follow-up. Decipher had an AUC of 0.72 in predicting PCSM. Percent likelihood for this endpoint ranges from 0.7-30.3%. This risk model has not yet been validated on prostate biopsy specimens but has been validated in multiple radical prostatectomy Decipher studies.

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Decipher classifies post-surgery patients* into genomic risk categories for metastasis with 98.5% Negative Predictive Value (NPV).

**Medicare Indications**
- Positive Surgical Margin (SM+)
- Extraprostatic Extension (pT3a disease)
- Seminal Vesicle Invasion (pT3b disease)
- Bladder Neck Invasion (pT4 disease)
- Rising PSA or Biochemical Recurrence

**Additional Indications**
- Pre-operative PSA ≥ 20ng/mL
- High Gleason Score ≥ 7
- Tertiary Gleason 5
- Perineural or Lymphovascular Invasion
- Lymph Node Involvement (LNI)

### Decipher Classification

<table>
<thead>
<tr>
<th>Genomic Low Risk</th>
<th>Treatment recommended post-surgery$^{1,3,8}$</th>
<th>Genomic High Risk</th>
<th>Treatment recommended post-surgery after PSA rise or biochemical recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation with PSA monitoring until detectable PSA rise, if any/ever$^3$</td>
<td>80% reduction in metastasis risk in Decipher high-risk patients who receive adjuvant or early radiation$^3$</td>
<td>Radiation alone is insufficient. Intensification of treatment may be needed.$^3$</td>
<td>Radiation alone is sufficient. Concurrent hormone therapy may be avoided.$^3$</td>
</tr>
<tr>
<td>• 98.5% 5 year metastasis-free survival$^1$</td>
<td>• 95% 10 year prostate cancer-specific survival$^1$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### References


*Clinically high risk patients with one or more of the “Post radical prostatectomy (RP) indications for Decipher test” listed above.
NCCN guidelines highlight Decipher as a clinically available tissue-based test for prostate cancer.

Decipher for patients after prostate surgery

- **Decipher low-risk patients** may be managed safely with observation until PSA rise.
- **Decipher high-risk patients** may require intensification of therapy beyond radiation as incidence of metastasis remains high.

Decipher for patients after prostate surgery with PSA rise or biochemical recurrence

- **Decipher low-risk patients** have excellent prognosis with salvage radiation and may avoid concurrent hormonal therapy, as incidence of metastasis remains low.
- **Decipher high-risk patients** may experience lower rates of metastasis when treated with adjuvant radiation post-RP.

*No concurrent hormone therapy given*
Suggested Patient Management Plan

Order Decipher®

Radical Prostatectomy

PSA Rise/BCR

Decipher High Risk

Decipher Low Risk

References


Order Decipher
Observation
PSA Rise/BCR
Excellent prognosis with SRT and may avoid concurrent hormone therapy.

Decipher High Risk
May require intensification of therapy beyond radiation.

Decipher Low Risk
Excellent prognosis with SRT and may avoid concurrent hormone therapy.

Radiation (ART Better Results Than SRT)
Decipher Post-Operative Report

Patient Details
Patient Name: [Redacted]
Medical Record Number: [Redacted]
Date of Birth: 01/01/1945
Date of Prostatectomy: [Redacted]
Pathology Laboratory: [Redacted]
Pathologist: [Redacted]
Address: [Redacted]

Order Information
Order Date: [Redacted]
Specimen Received Date: [Redacted]
GenomeDx Accession ID: [Redacted]
Specimen ID: [Redacted]
Ordering Physician: Dr. John Doe
Clinic/Hospital Name: St. John's Hospital
Clinic/Hospital Address: 555 Hospital St, San Diego, CA 92121

Clinical Details
Preoperative PSA (ng/mL) 4.2
Gleason Score: 4+3
- SM
- EPE
- SVI
- LNI
- BCR
- Tertiary Gleason 5

Your Decipher Result – Genomic High Risk

Decipher Score 0.7
Risk - Percent Likelihood
5-Year Metastasis 16.4%
10-Year Prostate Cancer Specific Mortality 11.4%

Interpretation
Clinical studies concluded that Decipher high-risk men with adverse pathology have a poor prognosis overall.1-3 These men may benefit from adjuvant or early salvage radiotherapy and consideration for clinical trials.4,5
Relevant findings from published clinical studies: Patients with Decipher high-risk had 77% 5-year metastasis-free survival and 70% 10-year cause-specific survival.1,2 For these patients, there was improved metastasis-free survival favoring adjuvant and early salvage postoperative radiotherapy.4,6
In patients with PSA rise or biochemical recurrence after surgery that received salvage radiotherapy, only 66.5% remained metastasis free after 5 years.4

References on reverse

*Average clinical risk refers to the average cohort risk of metastasis at 5 years post radical prostatectomy. The average cumulative incidence of metastasis was 6.0% at 5 years post radical prostatectomy, as reported by Kazus et al., 2013 from analysis of a cohort of 1,010 men with intermediate and high risk clinical features who received radical prostatectomy as first line treatment at the Mayo Clinic between 2000 and 2006.1
Fifty-five probability of metastasis endpoint. Decipher uses the genomic risk score to predict the 5-year probability of metastasis from the time of radical prostatectomy. Probabilities were generated from a Cox proportional hazards model based upon a cohort of 1,010 men with intermediate and high risk clinical features with a median 6 years of follow-up.1 Decipher had an AUC of 0.76-0.85 in multiple clinical validation studies for prediction of metastasis.1-3 Percent likelihood for this endpoint ranges from 0-33%.
Ten-year probability of prostate cancer-specific mortality (PCSM) endpoint. Decipher uses the genomic risk score to predict the 10-year probability of PCSM from the time of radical prostatectomy. Probabilities are generated from a logistic regression analysis based upon a cohort of 552 patients with 112 prostate cancer deaths within 10 years post radical prostatectomy. These probabilities are adjusted for a PCSM cumulative incidence of 5% at 10 years post radical prostatectomy.5 All men-PCSM patients in the study had at least 10 years of follow-up. Decipher had an AUC of 0.72 in predicting PCSM.1,3 Percent likelihood for this endpoint ranges from 0.7-50%.

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CLIA ID # 05D2055697
Page 1 of 2
Decipher Post-Operative Report

Patient Details
Patient Name: 
Medical Record Number: 
Date of Prostatectomy: 01/02/1945
Pathology Laboratory: 
Pathologist: 
Address: 

Order Information
Order Date: 
Specimen Received Date: 
GenomeDx Accession ID: 
Specimen ID: 
Ordering Physician: 
Clinic/Hospital Name: 
Clinic/Hospital Address: 
Additional Physician: 

Clinical Details
Preoperative PSA (ng/mL) 4.9
Gleason Score 4+3
- SM+ 
- EPE 
- SVI
- LNI 
- BCR
- Tertiary Gleason 5

Clinical studies concluded that Decipher low risk results in men with adverse pathology have good prognosis overall and may be optimally managed with observation after surgery. Upon PSA rise, these patients may be treated with delayed radiotherapy without concurrent hormone therapy. Relevant findings from published clinical studies: Patients with Decipher low risk had >98% 5-year metastasis free survival and >95% 10-year cause specific survival. For these patients there were no significant differences in metastasis free survival with adjuvant, early or late salvage postoperative radiotherapy treatment. In patients with PSA rise or biochemical recurrence after surgery that received salvage radiotherapy, >97% 5-year metastasis free survival was observed with or without concurrent hormone therapy.

Decipher Score 0.3

5-Year Metastasis 1.6%
10-Year Prostate Cancer Specific Mortality 2.5%

Interpretation

*Average clinical risk refers to the average cohort risk of metastasis at 5 years post radical prostatectomy. The average cumulative incidence of metastasis was 6.0% at 5 years post radical prostatectomy, as reported by Kerner et al., 2013 from analysis of a cohort of 7,063 men with intermediate and high risk clinical features who received radical prostatectomy as first line treatment at the Mayo Clinic between 2000 and 2006. Five-year probability of metastasis endpoint: Decipher uses the genomic risk score to predict the 5-year probability of metastasis from the time of radical prostatectomy. Probabilities were generated from a Cox proportional hazards model based upon a cohort of 5,000 men with intermediate and high risk clinical features with a median follow-up of 8.9 years of follow up. Decipher had an AUC of 0.76-0.85 in multiple clinical validation studies for prediction of metastasis. Percent likelihood for this endpoint ranges from 0.4-67.

Ten-year probability of prostate cancer specific mortality (PCSM) endpoint: Decipher uses the genomic risk score to predict the 10-year probability of PCSM from the time of radical prostatectomy. Probabilities are generated from a logistic regression analysis based upon a cohort of 537 patients with 112 prostate cancer deaths within 10 years post radical prostatectomy. These probabilities are adjusted for a PCSM cumulative incidence of 1% at 10 years post radical prostatectomy. All non-PCSM patients in the study had at least 35 years of follow-up. Decipher had an AUC of 0.72 in predicting PCSM. Percent likelihood for this endpoint ranges from 0.7-30.5%.

References on reverse

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CLIA ID # 05D6055897
Page 1 of 2
Based on the patient’s personal tumor-based genomics, Decipher Prostate Cancer Classifier helps determine who:

- Decipher Biopsy
  - May be suitable candidates for active surveillance
  - May be treated with local therapy alone
  - May benefit from intensification with multi-modal therapy
- Decipher Post-Op
  - May be safely observed after radical prostatectomy
  - May need adjuvant radiation
  - May be better managed with salvage radiation
  - May avoid hormone therapy with radiation

Decipher Prostate Cancer Classifier represents 22 biomarkers specific to prostate cancer representing multiple biological pathways

<table>
<thead>
<tr>
<th>Biological Pathway</th>
<th>Prostate-specific Biomarkers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Androgen-Signaling</td>
<td>NFIB, NUSAP1, ZWILCH</td>
</tr>
<tr>
<td>Cell Cycle Progression</td>
<td>AN07, PCAT-32, UBE2C</td>
</tr>
<tr>
<td>Cell Proliferation, Differentiation</td>
<td>CAMK2N1, MYBPC1, PBX1, THBS2, UBE2C</td>
</tr>
<tr>
<td>Cell Structure, Adhesion, Motility</td>
<td>AN07, EPPK1, IQGAP3, LASP1, MYBPC1, PCDH7, RABGAP1</td>
</tr>
<tr>
<td>Immune System Modulation</td>
<td>GLYATL1P4, S1PR4, TNFRSF19, TSBP</td>
</tr>
</tbody>
</table>

Access for All Patients
- Medicare Coverage (Mol Dx LCD ID L36343): Decipher post-op test covered for Medicare beneficiaries
- Private Insurance Coverage
- Proven and comprehensive financial assistance for patients

To learn more about Decipher, contact the GenomeDx Customer Support Team at 1.888.792.1601 (toll free) or email at customersupport@genomedx.com.

Robust and Prolific Technology Platform
- Archived FFPE tissue
- Whole genome technology
- Genomic analysis of **1.4 million biomarkers**