



Genomics and Genetic Testing



MYRIAD
myRisk®
Hereditary Cancer

Why is genetic testing important to you?

- Impact on immediate treatment decisions
- Identify risks for additional cancers and management strategies
- Identify family members at risk



How Common Is Hereditary Prostate Cancer?

Annual Incidence of Hereditary Cancer

SITE	ANNUAL INCIDENCE*	% of HEREDIATRY CANCER†	# PATIENTS WITH HEREDITARY CANCER
Breast	255,000	12-14%	25,700
PROSTATE	161,000	14%	22,500 a year
Colorectal	135,000	10%	13,500
Uterus	61,000	9%	5,400
Ovary	22,000	24%	5,300

*American Cancer Society, 2017

†www.MyriadPro.com

Identifying Patients At-Risk for Hereditary Cancer is The Standard of Care

NCCN Guidelines Version 2.2017 Prostate Cancer

INITIAL PROSTATE CANCER DIAGNOSIS

- DRE
- PSA
- Gleason primary and secondary grade
- **Family history***

Identifying Patients At-Risk for Hereditary Cancer is The Standard of Care

NCCN Guidelines Version 1.2018 BRCA-Related Breast and/or Ovarian Cancer Syndrome

Hereditary cancer testing is recommended for patients with prostate cancer who meet the following criteria:

- Metastatic prostate cancer
- Higher grade prostate cancer (Gleason score 7 or higher) **AND** a close blood relative* with ANY of the following:
 - Breast cancer \leq 50 years
 - Ovarian cancer at any age
 - Pancreatic cancer at any age
 - Two or more Breast Cancers, Pancreatic cancers, or higher grade prostate cancers (Gleason 7 or higher) at any age

*Close blood relatives include parents, children, siblings, grandparents, aunts/uncles, nieces/nephews, great-grandparents, and first cousins.

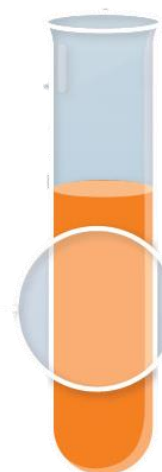
Tumor Testing vs. Germline Testing

Tumor testing can help guide treatment management (e.g., Prolaris)



Tumor Biopsy

Germline testing (blood or buccal) can help determine if a mutation was inherited and help guide treatment and risk management options for patient and family members (e.g., myRisk)



Blood Test



Prolaris[®]

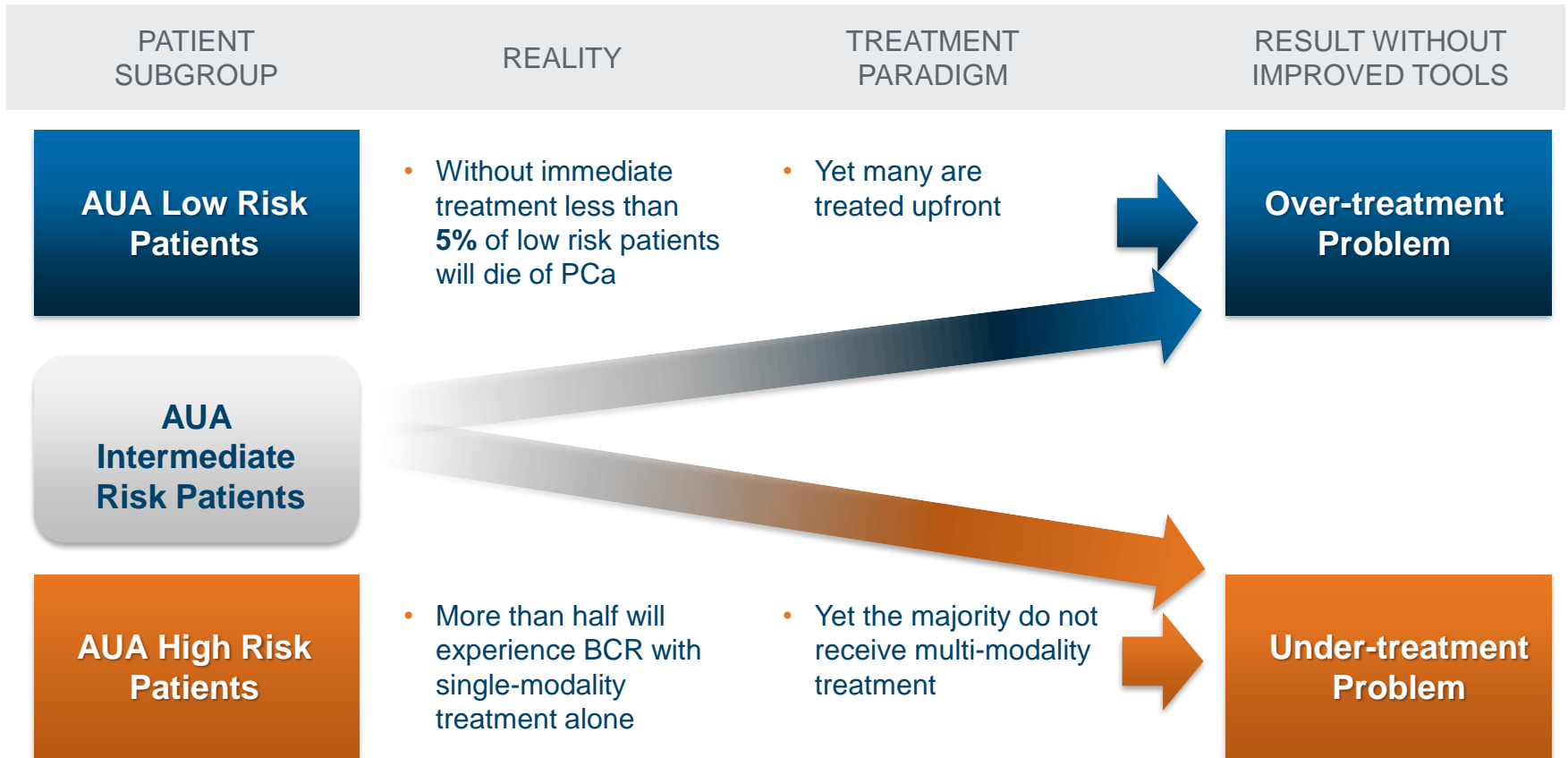
Prostate Cancer

The Patient Newly Diagnosed with Prostate Cancer:

What do we want to know?

- How aggressive is this patient's specific cancer?
- What is the risk this patient will die from his prostate cancer?
- Is this a good patient for AS or is immediate definitive intervention warranted?

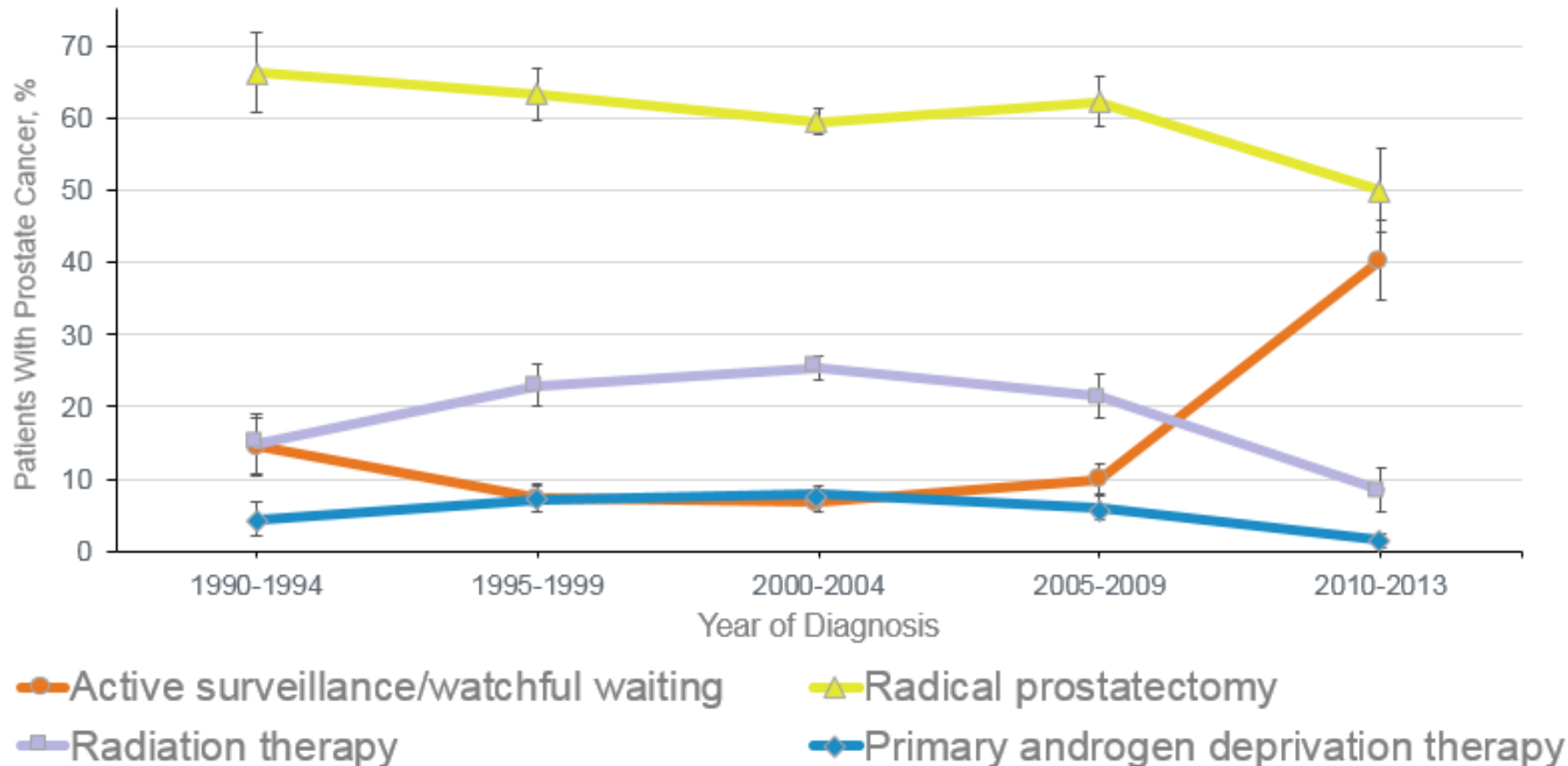
Answers Aren't Always as Clear as We Would Like



Wilt et al. Prostate Cancer Intervention versus Observation Trial (PIVOT) Study Group. *N Engl J Med.* 2012;367:203-213.
 Prostate cancer infolink. (2011). CAPRA-S scores and projection of prostate cancer recurrence post-surgery. Accessed Feb 2012 from <http://prostatecancerinfolink.net/2011/06/29/capra-s-scores-and-projection-of-prostate-cancer-recurrence-post-surgery>

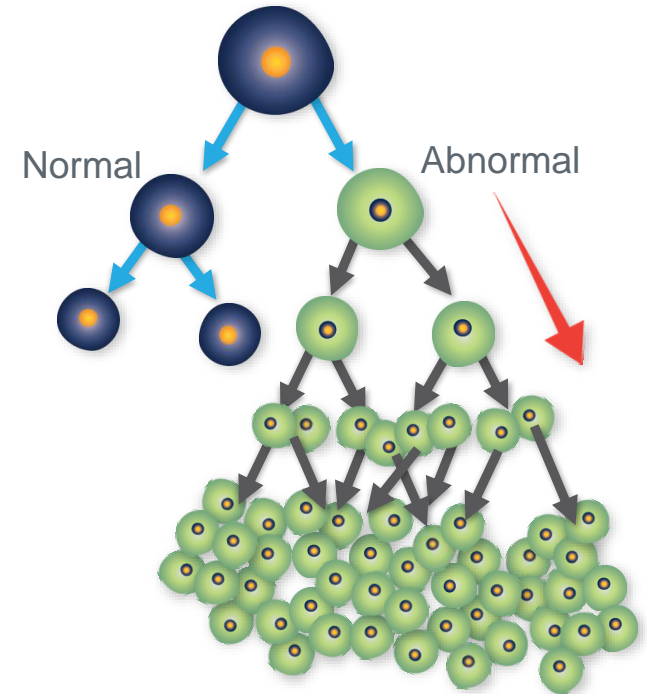
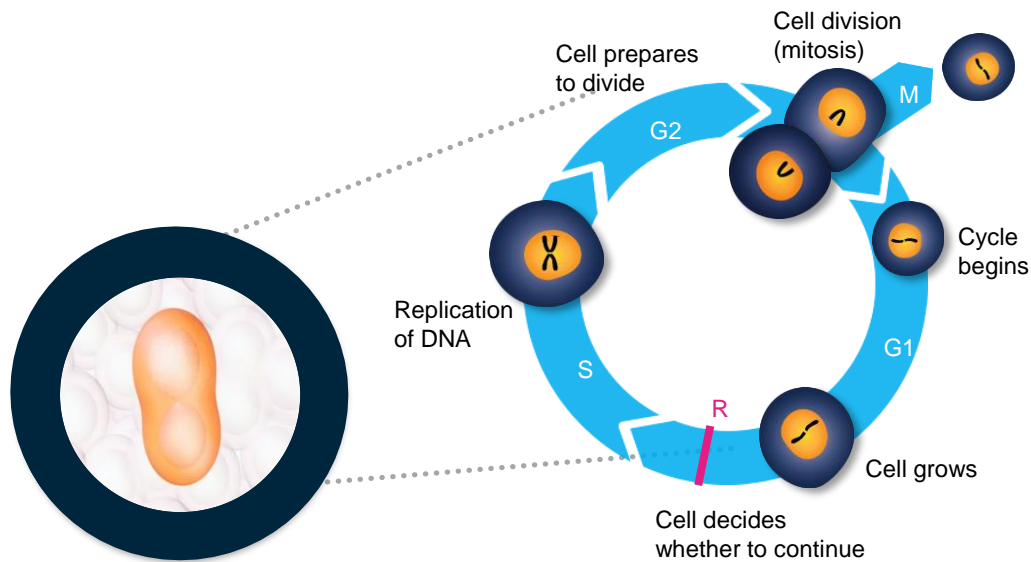
More and More Physicians and Patients Are Choosing Active Surveillance

Low Risk Range (CAPRA score range, 0-2)



Cooperberg, Carroll; Trends in Management for Patients With Localized Prostate Cancer, 1990-2013; JAMA July 7, 2015 Vol. 314:1

To Truly Understand the Aggressiveness of the Patient's Cancer We need to look beyond the microscope.



Genes Associated With Cell Cycle Measure the
True Hallmark of Cancer - Proliferation

11 Published Validation Cohorts

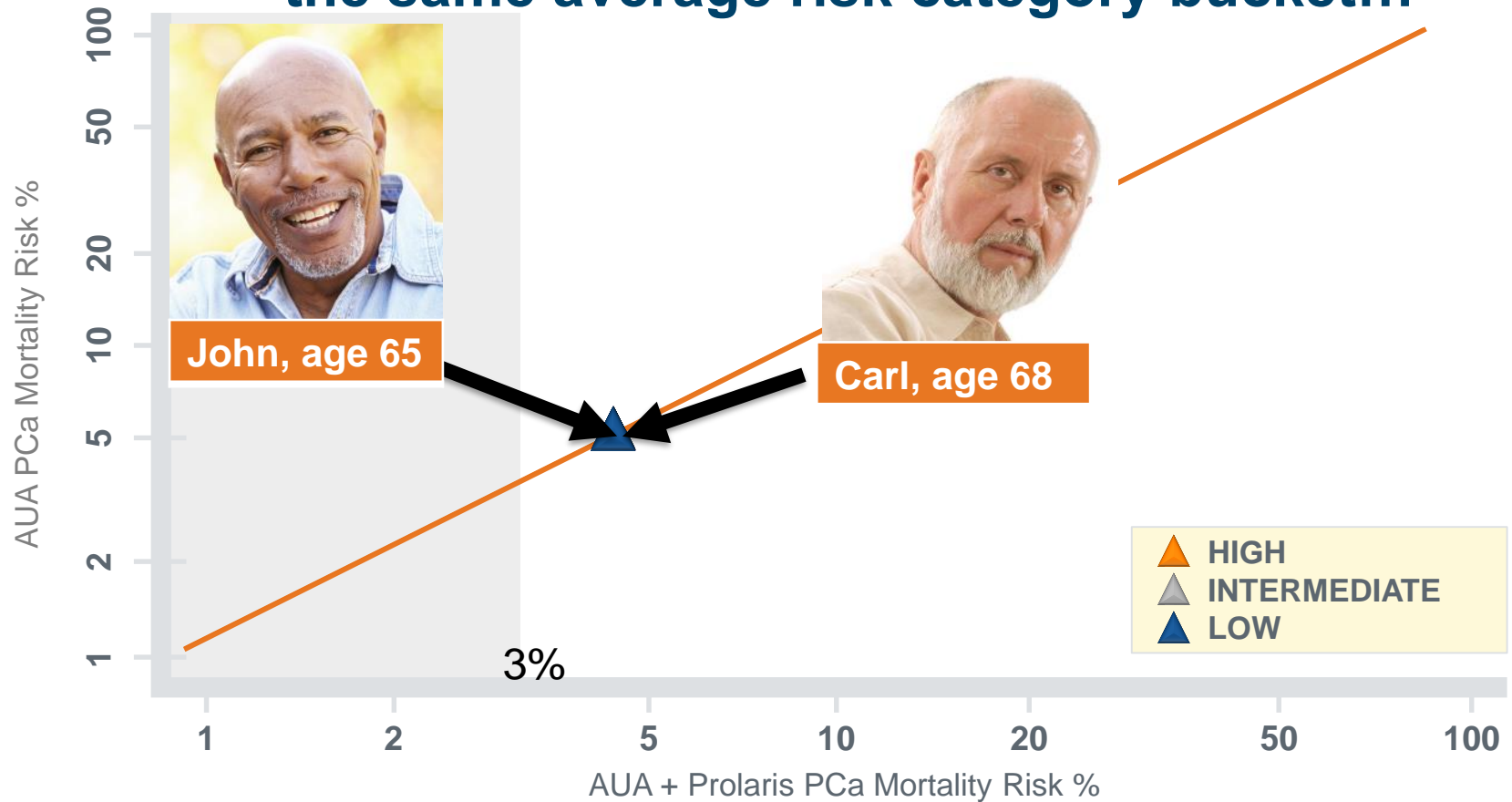
AUTHOR & YEAR	COHORT	PRIMARY ENDPOINT	ABILITY OF PROLARIS TO PREDICT ENDPOINT
Cuzick 2012	<u>Biopsy:</u> Conservatively managed U.K. patients diagnosed by needle biopsy from 1990-1996.	10-year mortality	Prolaris most predictive
Cuzick 2015	<u>Biopsy:</u> Contemporary cohort of conservatively managed U.K. patients diagnosed by needle biopsy from 1990-2004	Disease specific mortality	Prolaris most predictive
Cuzick 2011	<u>Post-prostatectomy:</u> U.S. men, radical prostatectomy from 1985-95; tumor registry.	Biochemical recurrence	Prolaris and PSA were most predictive
	<u>Transurethral resection of the prostate:</u> Conservatively managed U.K. patients diagnosed after TURP form 1990-1996.	10-year mortality	Prolaris most predictive
Cooperberg 2013	<u>Post-prostatectomy:</u> Contemporary cohort of U.S. men, radical prostatectomy from 1994-2006.	Biochemical recurrence	Prolaris most predictive
Freedland 2013	<u>Biopsy:</u> U.S. men, external beam radiation therapy (EBRT) from 1991-2006.	Biochemical recurrence	Prolaris most predictive
Bishoff 2014	<u>Biopsy:</u> German men, radical prostatectomy from 2005-2006.	Metastatic disease	Prolaris most predictive
	<u>Biopsy:</u> U.S. men, radical prostatectomy from 1994-2005.		
	<u>Biopsy:</u> U.S. men, radical prostatectomy from 1997-2004.		
Koch 2016	<u>Post-prostatectomy:</u> U.S. men, radical prostatectomy from 1995-2010	Prediction of metastatic disease and response to salvage radiation after BCR	Prolaris and Gleason were most predictive
Tosoian 2017	<u>Biopsy:</u> Contemporary cohort, low-risk disease	Biochemical recurrence	Prolaris most predictive

Prolaris provides prognostic information across all risk groups



Two Patients:

AUA Risk categorizes these two patients as the same average risk category bucket...



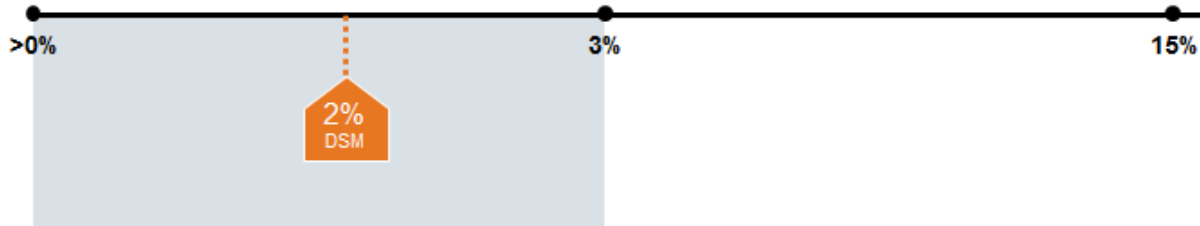
Data on file Myriad Genetic Laboratories, Inc.

But the reality in our two patients...

Mortality Risk

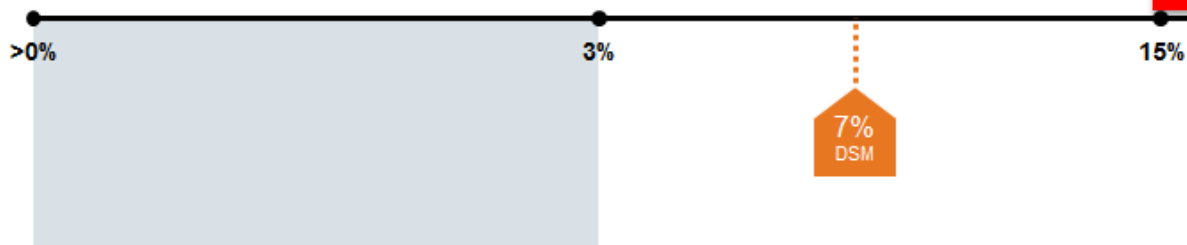
Consistent

Mortality Risk: 2% 10-Year Prostate Cancer-Specific



John, age 65

Mortality Risk: 7% 10-Year Prostate Cancer-Specific



Considerably More Aggressive



Carl, age 68



For More Information:
800-469-7423 or helpmed@myriad.com
www.Prolaris.com
www.HereditaryCancerQuiz.com

