Dietary and Lifestyle Adjuncts to Active Surveillance

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What do <u>physicians</u> think of active surveillance?

- **Close observation**
  - **i.e. <u>active</u>**
- **Prevents side effects from treatment**
- **Allows delayed definitive therapy**
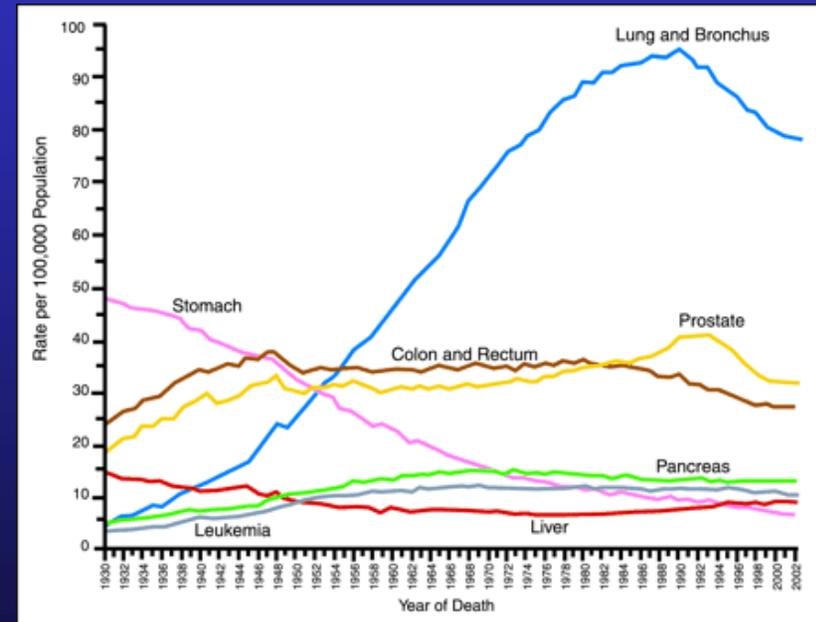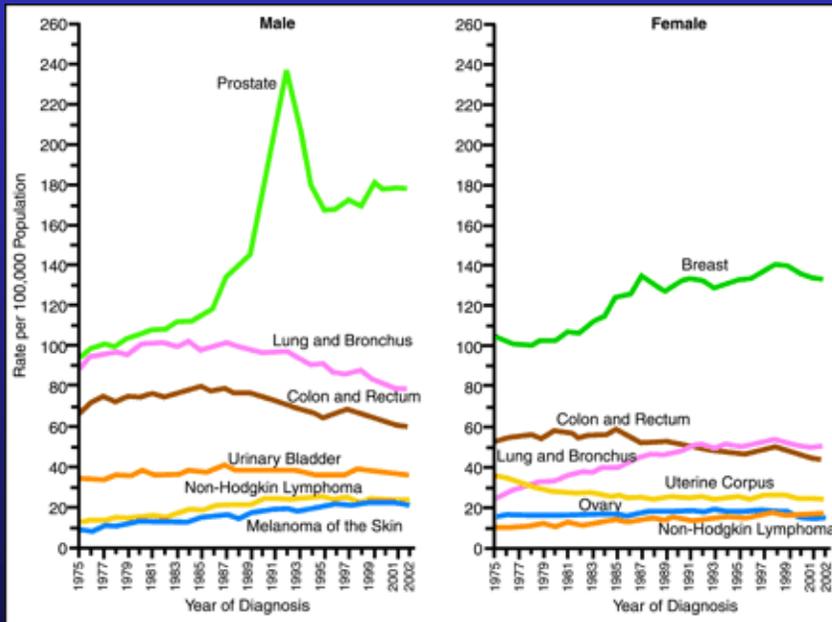- **Not right for all men, but in general underutilized**

What do <u>patients</u> think of active surveillance?

- **Allowing time for the tumor to grow**
- **Delaying the inevitable**
- **Doing nothing**
  - i.e. <u>not active</u>

Active Surveillance: Rationale

Incidence: 170/100,000
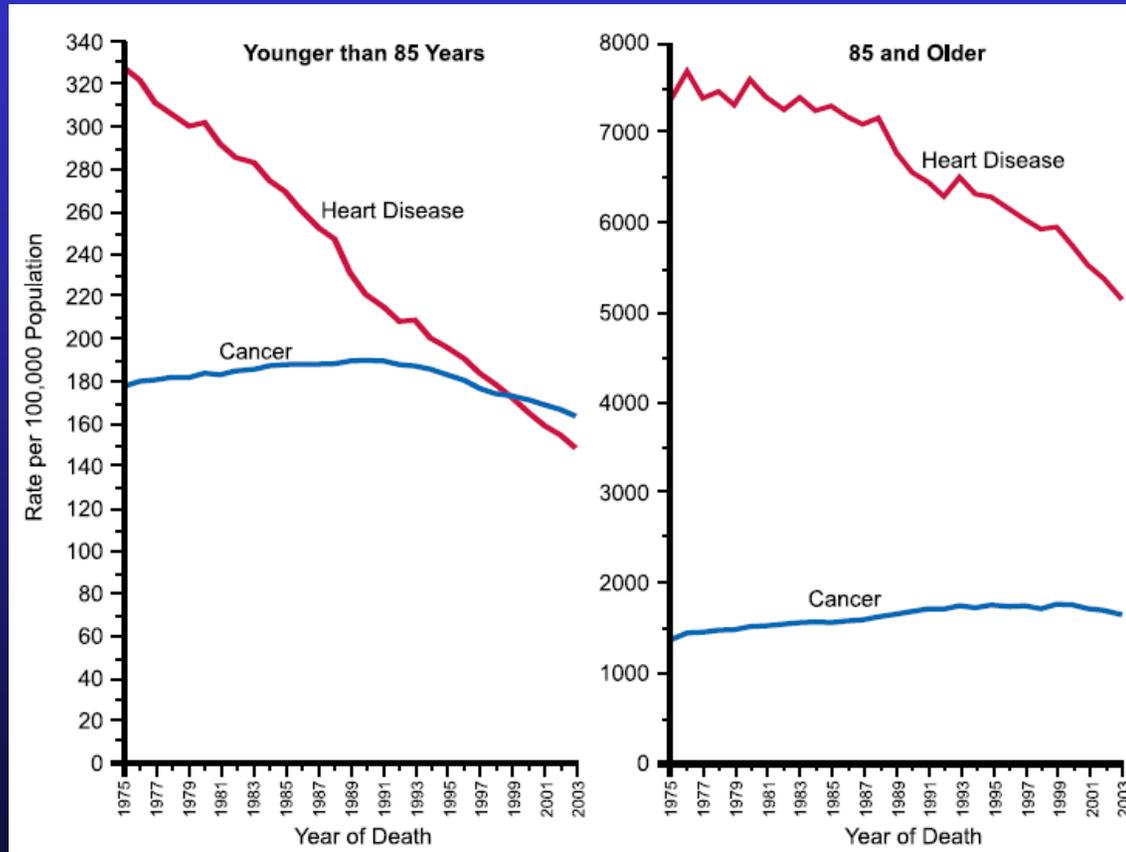
Mortality: 32/100,000

170/100,000 get prostate cancer

32/100,000 die from prostate cancer

138/100,000 get prostate cancer and die from other causes

What do People die from?

Answer: Heart Disease – number one killer

How do we prevent heart disease?

- **Dietary modifications**
  - **Weight loss**
  - **Reduced saturated fat**
  - **Reduced refined carbohydrates**
- **Lifestyle changes**
  - **Exercise**
  - **Quit smoking**

Why recommend the same changes for prostate cancer patients?

- **Improves overall health**
  - Reduced risk of heart disease, diabetes
- **Improves quality of life**
  - More energy
  - Can improve ED
- **Allows the patient to do "something"**
  - Patients become **active** participants in their own care
- **May slow tumor growth?**

Active Surveillance +

- **Active Surveillance per "protocol"**
- **Aggressive dietary and lifestyle modification**
- **Goal:**
  - **Weight loss**
  - **Specific dietary changes**
 - **Improved physical fitness**

Diet

- **From the Greek word diaita**
- **Literally, "*way of life*"**
- **Should not be viewed as short-term intervention to lose weight**
- **A proper "way of life" reduces risk of heart disease, #1 killer**
- **Heart healthy = prostate healthy**

Weight Loss

- **~ 70% of men in the US are overweight or obese**
- **Thus, ~70% of men with prostate cancer in the US are overweight or obese**
- **Weight loss = fewer calories in than out**
  - **Caloric restriction**
  - **Increased energy expenditure**
  - **Both**

Does Weight Loss Slow Prostate Cancer Growth?

- **Animal Studies: YES**

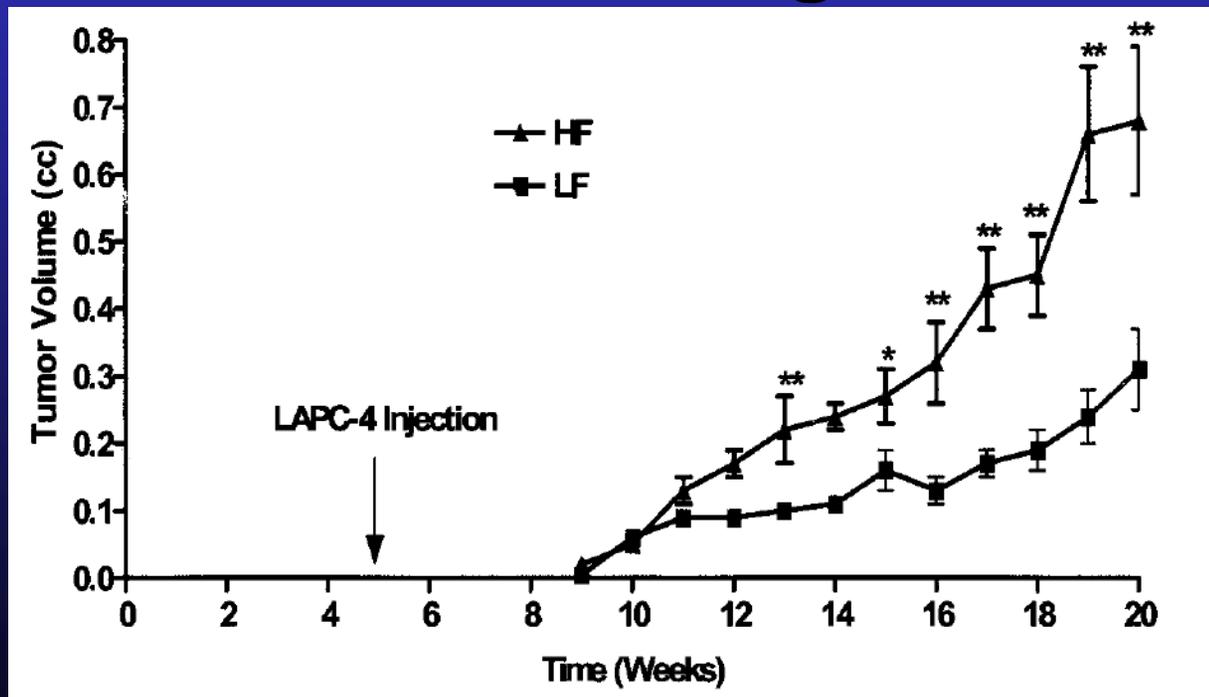**Dunning Rat Tumors   LNCaP Xenograft**
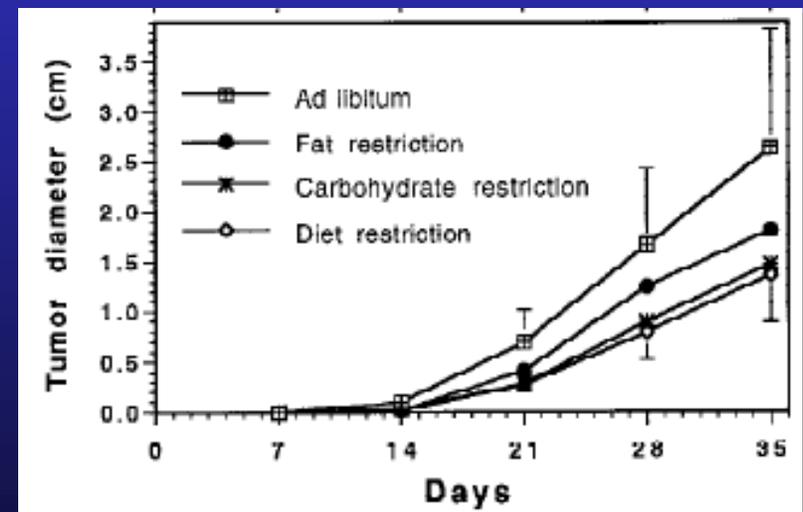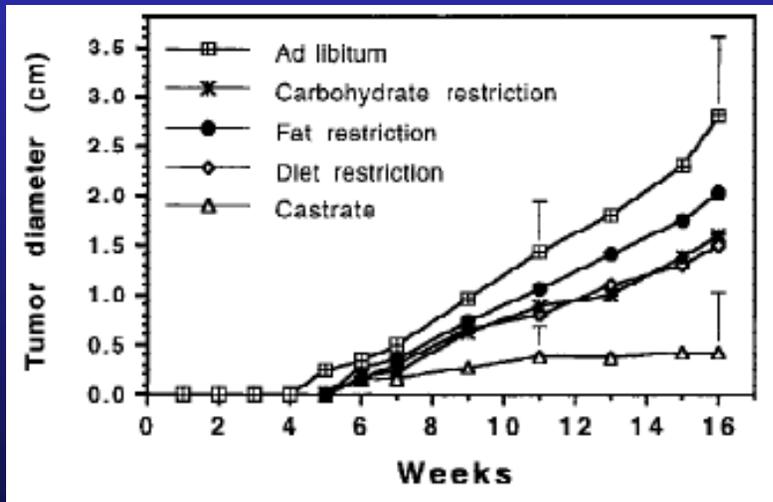
NOTE: Simply cutting fat perhaps not as good as cutting total or carbohydrate calories

Mukherjee et al. JNCI, 1999
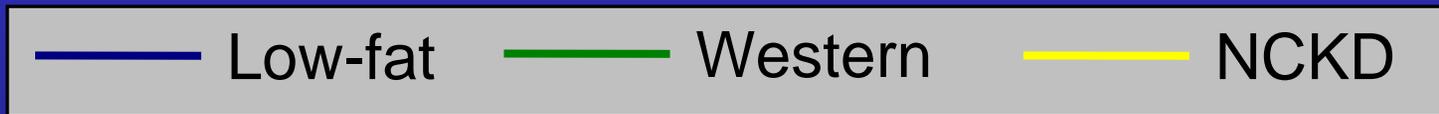
Does Cutting Fat Slow Prostate Cancer Growth?

- **Animal studies: YES**

  LAPC-4 Xenograft

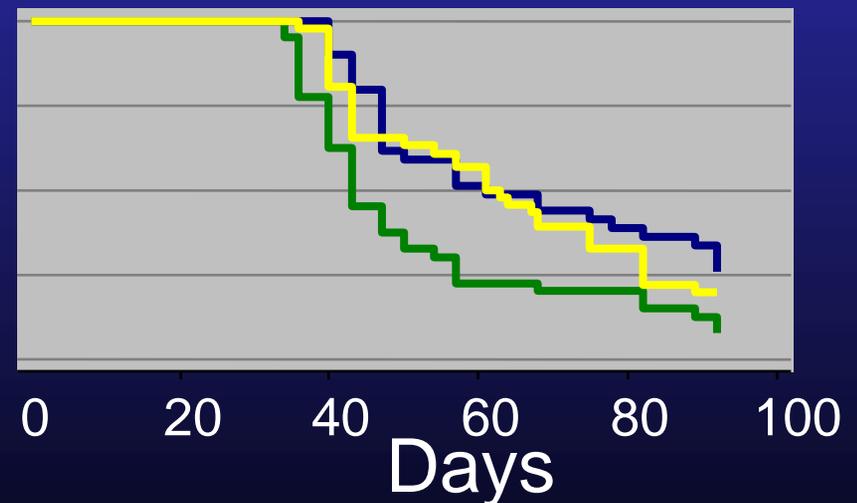# Does Cutting Carbohydrates Slow Prostate Cancer Growth?

- **Animal studies: YES**

Legend: Low-fat · Western · NCKD

LAPC-4 Xenograft (Survival % vs Days)

LNCaP Xenograft (Survival % vs Days)
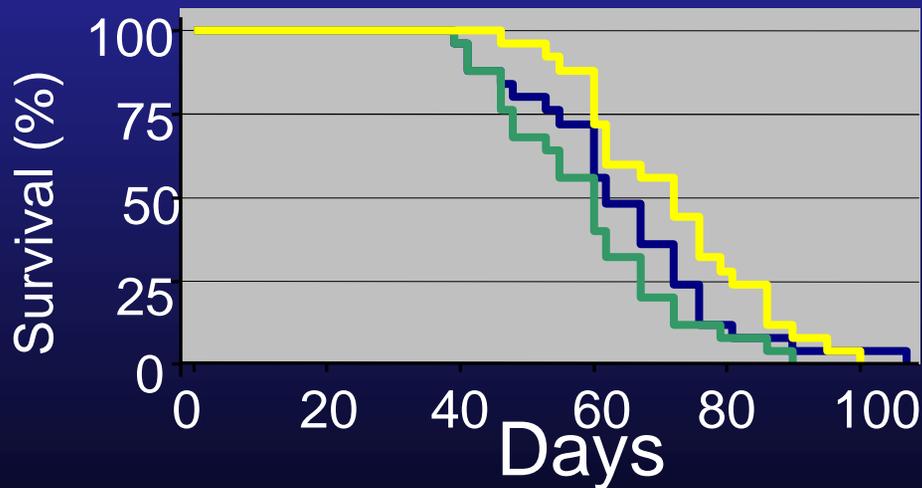
Freedland et al. AUA, 2007
Buschemeyer et al, AUA 2007

Human Studies: Excess Calories in Prostate Cancer Risk

- **Obesity (end result of excess calories)**
  - 30% increased risk of fatal prostate cancer
  - Increased risk of cancer recurrence after treatment
- **Increased energy intake increases prostate cancer risk**
- **Weight gain increases risk**
- **Weight loss decreases risk**

Human Studies: Lifestyle Change after Diagnosis – Other Cancers

- WHEL study (Pierce et al, JAMA '07)
- ~3,100 women with previously treated breast cancer randomized to phone counseling/cooking classes vs. hand-outs
- Goal: Increase fruit and vegetable and decrease fat intake
- Intervention: Vegetables, +65%; fruit, +25%; fiber, +30%, and energy intake f/fat, -13%
- No change in weight in either group
- No difference in recurrence or death

Human Studies: Lifestyle Change after Diagnosis – Other Cancers

- WINS study (Chlebowski et al, JCNI '06)
- ~2,400 women with resected breast cancer randomized to low-fat diet vs. control
- Goal: Decrease fat intake
- Intervention: energy intake f/fat, -19%
- 2.7 kg drop in weight in intervention
- Overall, 24% reduction in recurrence risk
- ER+: 15% reduction (p=0.28)
- ER-: 42% reduction (p=0.02)

Human Studies: Lifestyle Change after Diagnosis - Prostate

- **Chan et al, JCO review '06 on diet and prostate cancer**
  - 5½ pages of text
  - 1 paragraph on post-diagnosis
  - Conclusion: we don't know much
- **Chan et al, Cancer Causes Control '06**
  - 1,202 men with CaP
  - Increased tomato sauce after diagnosis reduced progression 30-40%

Human Study of Lifestyle Change

- **Ornish et al, J. Urology 2005**
- **93 men on AS for PSA<10, Gleason <7**
- **Randomized to standard diet or intensive lifestyle intervention**
  - **10% dietary fat vegan diet**
  - **Yoga, meditation**
- **4% decreased PSA in experimental arm**
- **6% increased PSA in standard arm**

Summary

- **Active surveillance chosen due to low risk of cancer progression**
  - **Assumption: more likely to die of causes other than prostate cancer**
  - **#1 killer is heart disease**
- **Heart disease is preventable**
- **Active surveillance + allows patients to take active role**

Summary

- **Proper nutrition important in overall health**
  - **Reduce heart disease**
  - **Improve quality of life**
- **Slow tumor growth?**
- **Ideal way of life not known**
- **My recommendation:**
  - **Low: calorie, carb (glycemic index), meat**
  - **High: Exercise, vegetable and fruits, nuts, legumes (beans and peanuts), whole grains**