Protein Is Not What I Once Thought
It Was 59+ Years Ago

T. Colin Campbell
Professor Emeritus
Nutritional Biochemistry

Cornell University
Feeding Malnourished Children

Promoting Greater Protein Consumption

1966-1975

nutritionstudies.org
Whoops....More liver cancer among children consuming more protein???
# Supporting Evidence

(Aflatoxin Initiation—Protein Promotion)

<table>
<thead>
<tr>
<th>Dietary Protein (%en)</th>
<th>Animals with tumors and hyperplastic nodules</th>
</tr>
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<tbody>
<tr>
<td>20% <em>(regular)</em></td>
<td>30/30 <em>(100%)</em></td>
</tr>
<tr>
<td>5% <em>(low)</em></td>
<td>0/12 <em>(0%)</em></td>
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47 years ago

Confirm Madhavan et al

Determine mechanism (‘biological plausibility’)

Discovering a new world of nutrition principles—it’s all about science
Dietary Protein and EARLY Cancer

Chemical Initiation (Mutation)

Protein Promotion (Feeding)

20% protein

5% protein

Cancer Index

Weeks

3

6

9

12

nutritionstudies.org
Dietary Protein and EARLY Cancer

Chemical Initiation (Mutation)

Protein Promotion (Feeding)
Principle 1: Nutrition Controls Cancer

Chemical Initiation (Mutation)

Protein Promotion (Feeding)
Dietary Protein and Lifetime Cancer (Rats)  
(Youngman and Campbell, Carcinogenesis, 1992)

Chemically Initiated: Nutritionally Promoted

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<th>Protein, %</th>
<th># Animals</th>
<th>Tumor Severity*</th>
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<tr>
<td>5</td>
<td>All living at 100 weeks</td>
<td>60</td>
</tr>
<tr>
<td>20</td>
<td>All dead at 100 weeks</td>
<td>58</td>
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* % incidence x tumor weight.
Experimental Protein is **CASEIN** (Main Protein of Cow’s Milk)

Principle 2: Animal Protein Functions Differently From Plant Protein

*Soy* & *wheat* protein did not increase pre-cancer development, even at 20% of diet calories
Principle 3: Nutrition Involves Countless Mechanisms

**INITIATION** (genes, chem carcinogens)
Carcinogen cell entry, increased carcinogen activation (MFO synthesis and structure), DNA binding (genes)

**PROMOTION** (nutrient imbalances)
Increased cell replication and IGF, decreased NK cell activity, oxidant activity

T Colin Campbell, Cornell
Genetics Or Nutrition? (Early 1980s)

More Cancer (Mutations) Genes → Normal Cells → Less Cancer (Mutations) Genes

Genes ‘Cause’ Cancer

More tumors

Less tumors
Principle 4: Nutrition Controls Genes Irrespective Of Mutagenic Dose

More Cancer Genes → Normal Cells → Less Cancer Genes

Low (5%) Protein → More tumors

High (20%) Protein → Less tumors
Dietary Protein and EARLY Cancer

(Dunaif and Campbell, J. Nutr. 1987)
Dietary Protein and EARLY Cancer

(Dunaif and Campbell, J. Nutr. 1987)

Principle 5: Dietary animal protein in excess of ‘RDA’ promotes cancer

Cancer Index

% Dietary Protein

Human Consumption
# NUTRIENT COMPOSITIONS*

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*PROCESSED FOODS are varied, likely worse*
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**Principle 6:** Animal protein harm composed of two parts: direct and indirect (i.e., displacement of foods that ought to be consumed)

*PROCESSED FOODS are varied, likely worse*
Hypothesis: Whole Food, Plant-Based Diet Prevents, Suspends and/or Cures All
(Peer-reviewed research findings: refs mostly in “The China Study”)

Cancers
Cardiovascular Diseases
Multiple Sclerosis
Kidney Stones
Osteoporosis
Diabetes (I and II)
Rheumatoid Arthritis
Obesity
Erectile Dysfunction

Macular Degeneration
Hypertension
Acne
Migraine
Lupus
Depression
Alzheimer’s Disease
Cognitive Dysfunction
Pain
Hypothesis: Whole Food, Plant-Based Diet Prevents, Suspends and/or Cures All
(Peer-reviewed research findings: refs mostly in “The China Study”)

Cancers
Macular Degeneration

Principle 7: WFPB nutritional effect is broad

Multiple Sclerosis
Acne

Kidney Stones
Migraine

Principle 8: WFPB nutritional effect is rapid

Diabetes (I and II)
Depression

Rheumatoid Arthritis
Alzheimer’s Disease

Principle 9: If sustained, WFPB nutritional effect may treat, not only prevent, existing disease

Erectile Dysfunction
Pain
Macronutrient Comparisons

% Fat+Protein

SAD*  Vegetarians*  Vegans*  WFPB

Whole food plant based diet, nutritionally speaking, is substantially different from vegan and vegetarian diets.

Why is the WFPB story not better known?

Because large human studies have not included WFPB subjects, mostly because of the paradigm that promotes reverence for animal-based protein.
Thank You