ALIMENTI "FUNZIONALI" DEL PASSATO: IMPORTANZA DELL'EVIDENZA SCIENTIFICA NELL'UOMO

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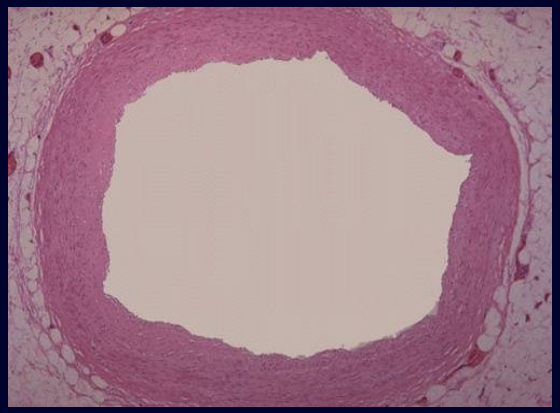
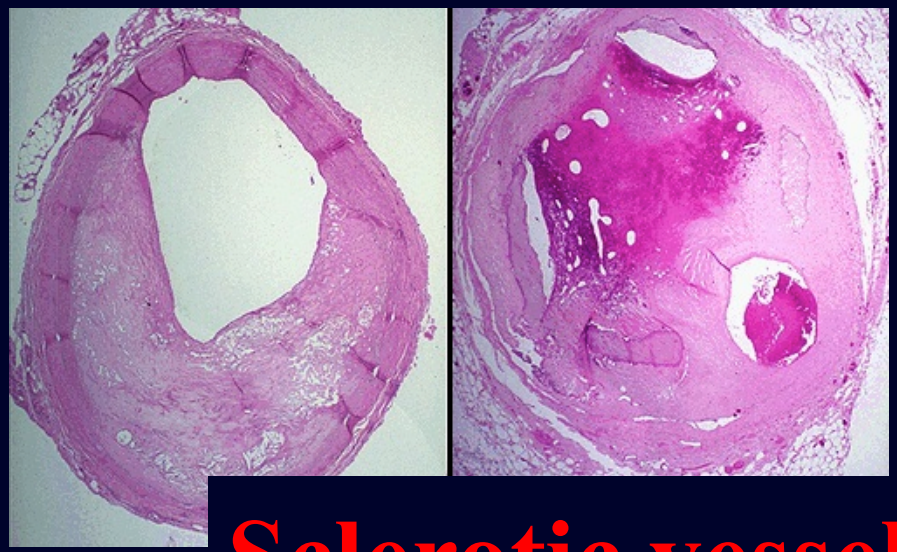
Consumer Awareness

Normal vessel



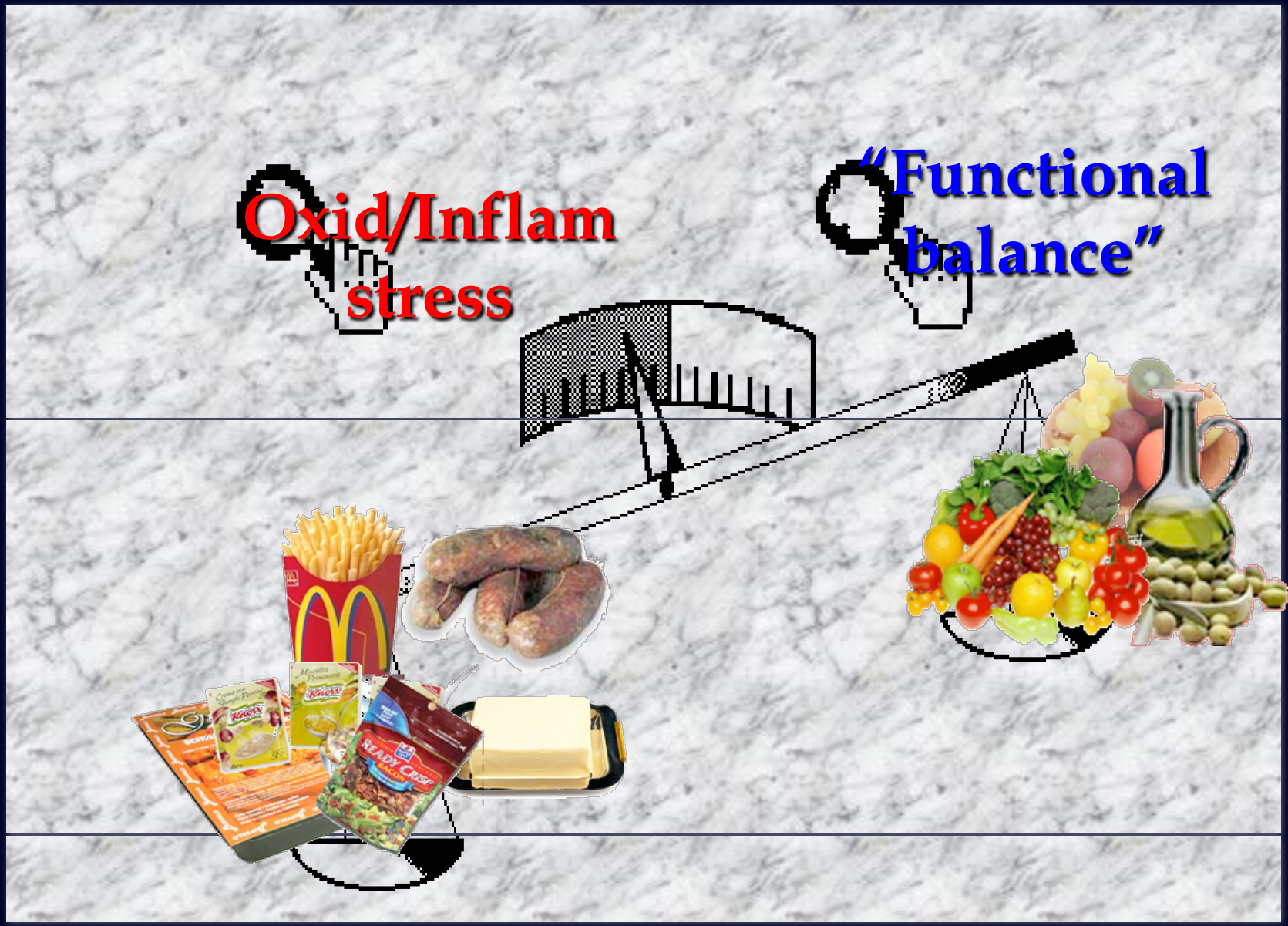
Stressors: Free Radicals, Cytokines, Fat, Sugars, Physical inactivity



Sclerotic vessel

Lack of Adaptive response
Differential gene expression
Dysfunction of endothelial cell homeostasis
Oxidative and inflammatory stress
Fat accumulation

OXIDATIVE/INFLAMMATORY STRESS



SUBJECTS

- ✓ Fifteen Healthy Overweight
- ✓ BMI 25-30 Kg/m^2
- ✓ Age 30-55 years
- ✓ Non-smokers
- ✓ No drug or vitamin supplements

STUDY DESIGN

2 Days wash-out

HFM p | **HFM 2.4.5**

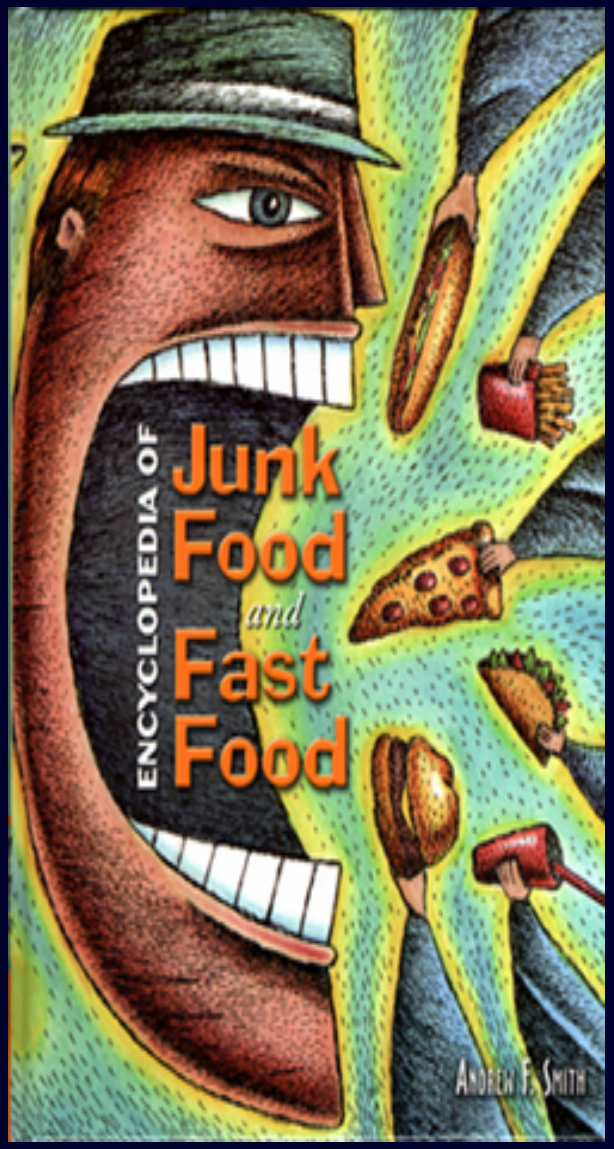
Group A (n = 8) | Group B (n = 8)

Blood sampling (0, 0.5, 1, 2, 4, 6 and 8 h)
Urine sampling (0-8, 8-12 and 12-24 h)

10 Days wash-out

Phases 2

STRESSOR MEAL



Total Energy: 1351 kcal

Fat : ~ 55 % E°

Protein : ~ 29 % E

Carbohydrates : ~ 15 % E°

- ✓Cheese (90g)
- ✓ Bread (90g)
- ✓ Potatoes (212g)
- ✓Sunflower oil (32g)
- ✓ Whole eggs (108g)

FJ

63% Juice blend:

Pineapple

Blackcurrant

Plum

Extracts:

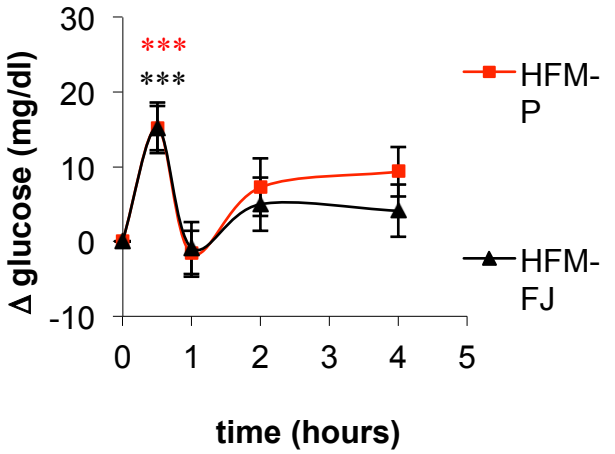
Pineapple flavour

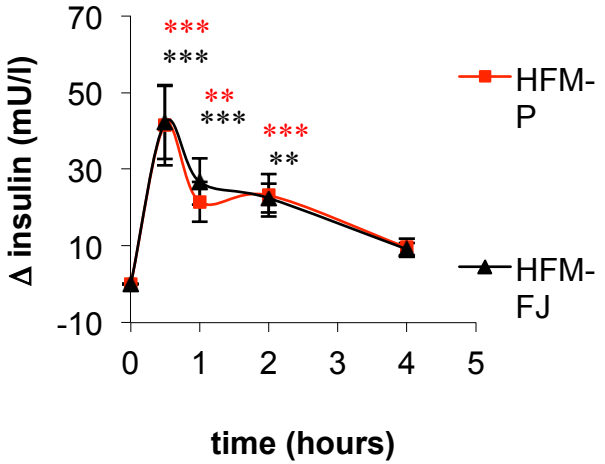
Plum flavour

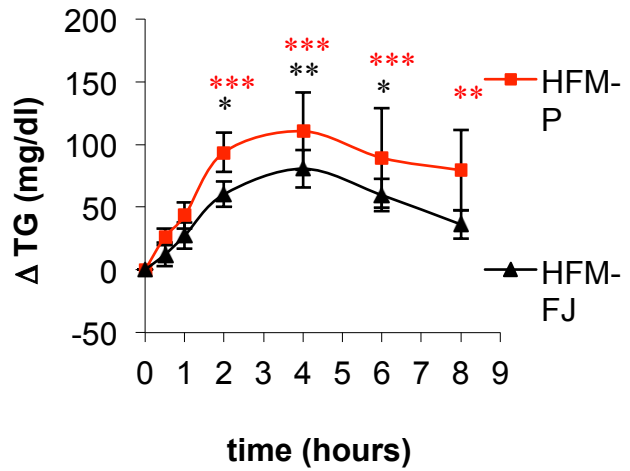
Compound	mg/L
Anthocyanins	32.0
Hydroxycinnamates	0.5
Flavan-3-ols	2.5
Flavonols	20.0
Total Flavonols	795

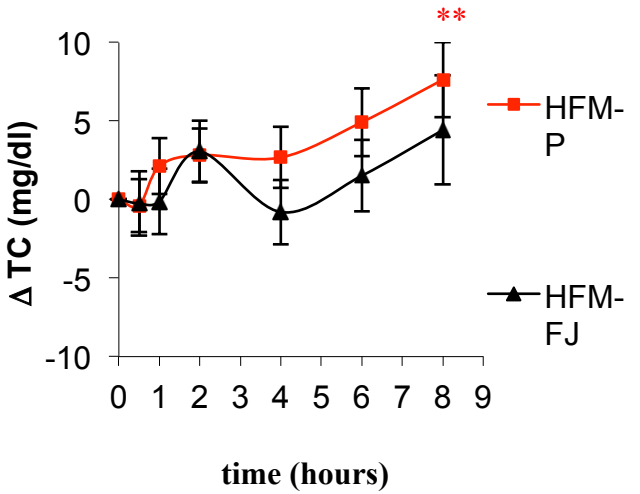
High Fat Meal Increase of IL-17 is Prevented by Ingestion of Fruit Juice Drink in Healthy Overweight Subjects

Ilaria Peluso[1], Anna Raguzzini[1], Debora V Villano[2], Eleonora Cesqui[1], Elisabetta Toti[1], Giovina Catasta[1] and Mauro Serafini[1,*]









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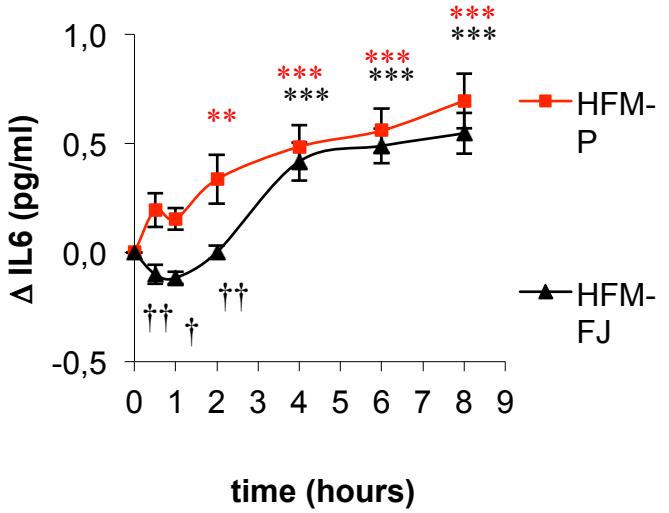
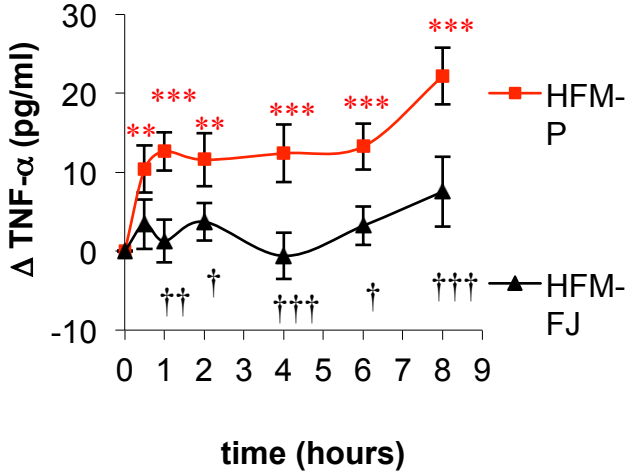
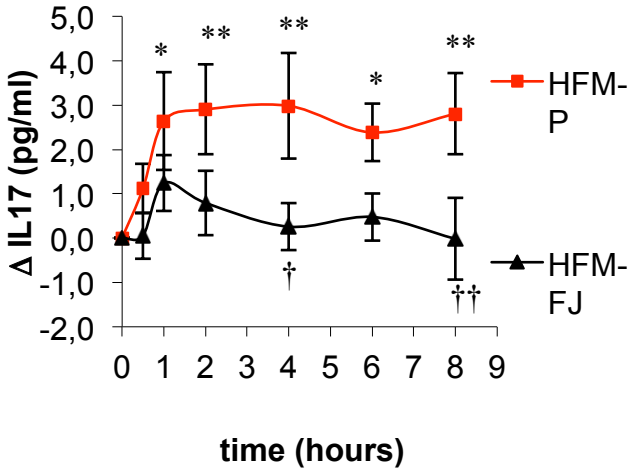
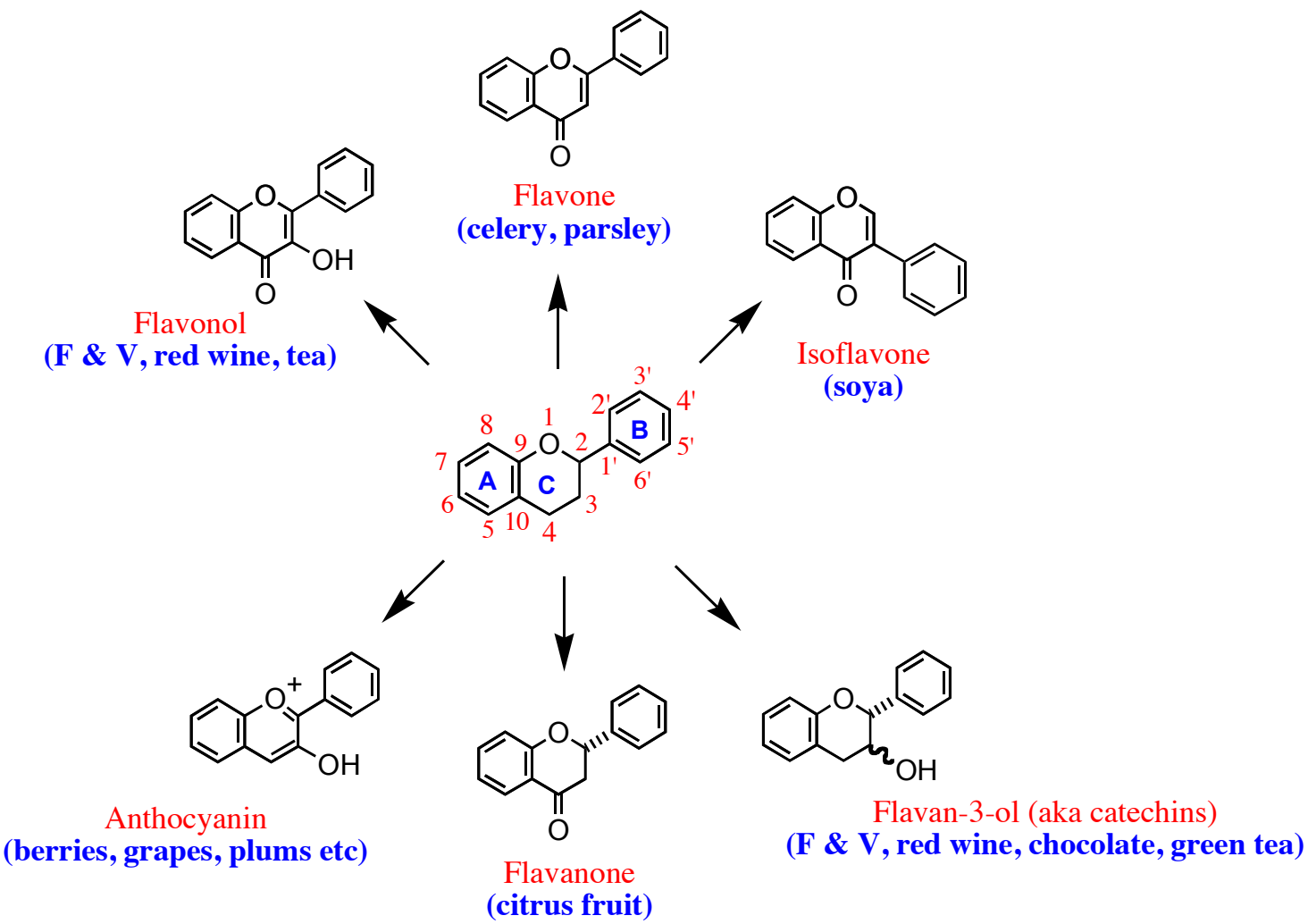
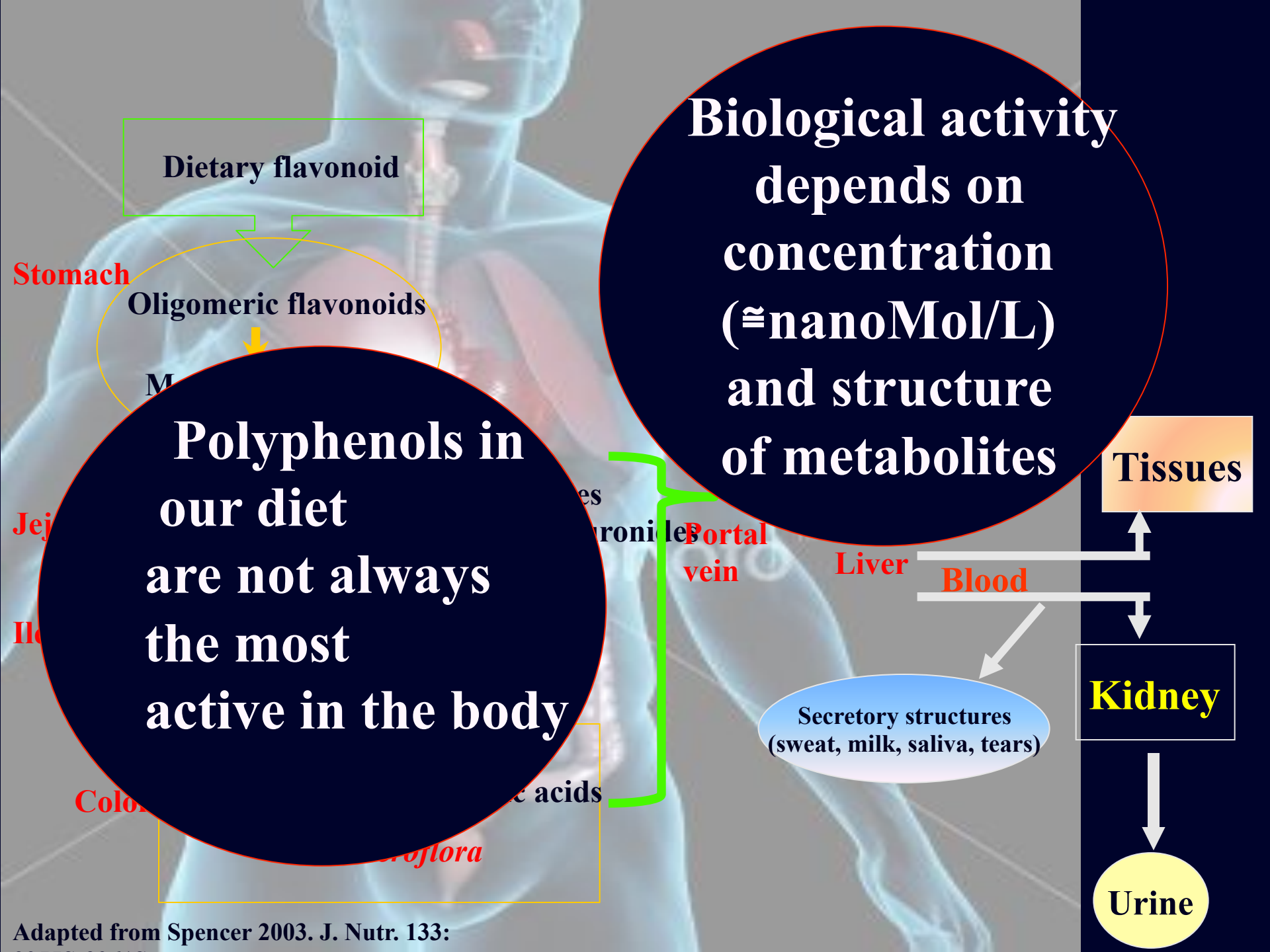






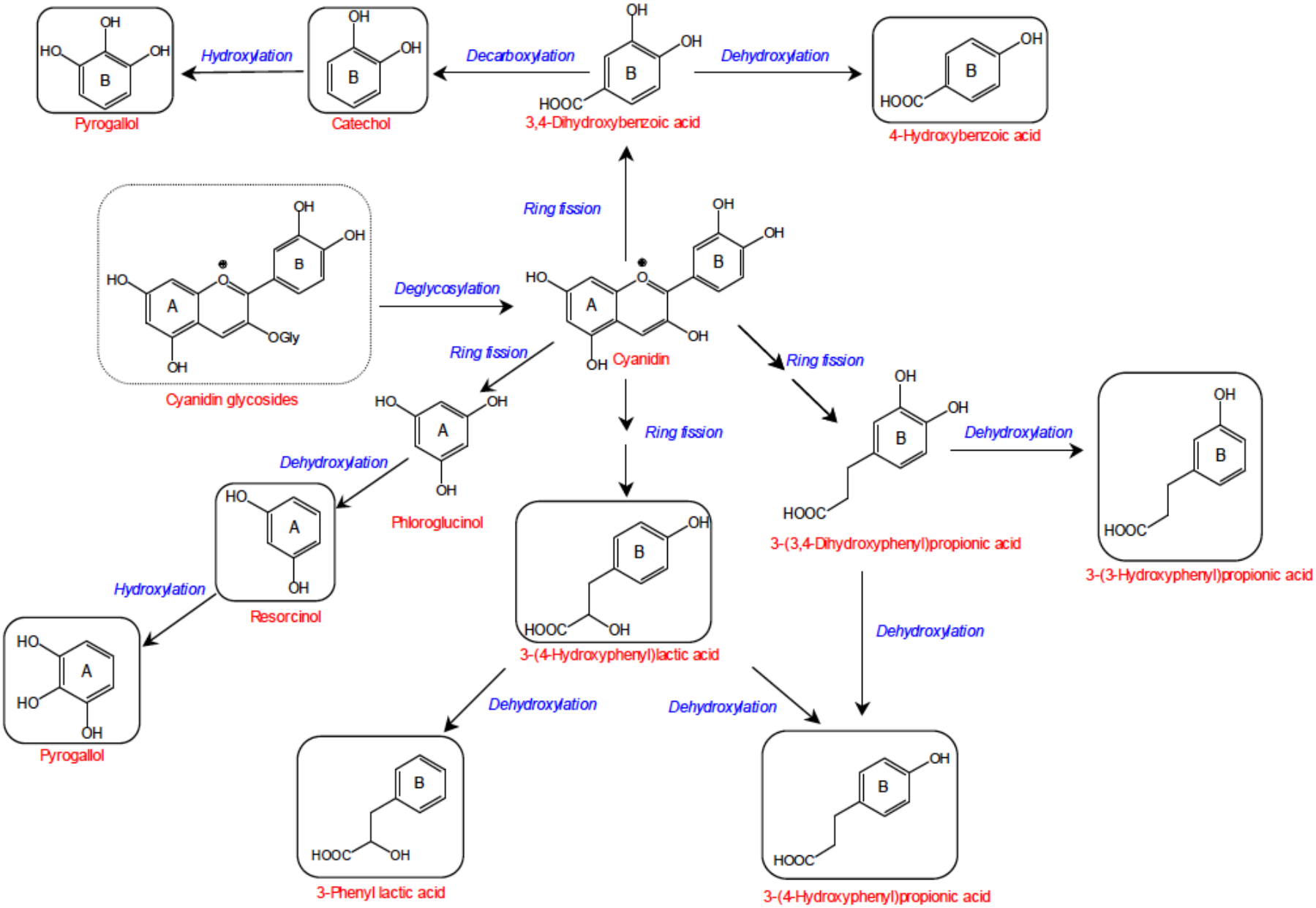
Common C_6-C_3-C_6 Flavonoid Structures



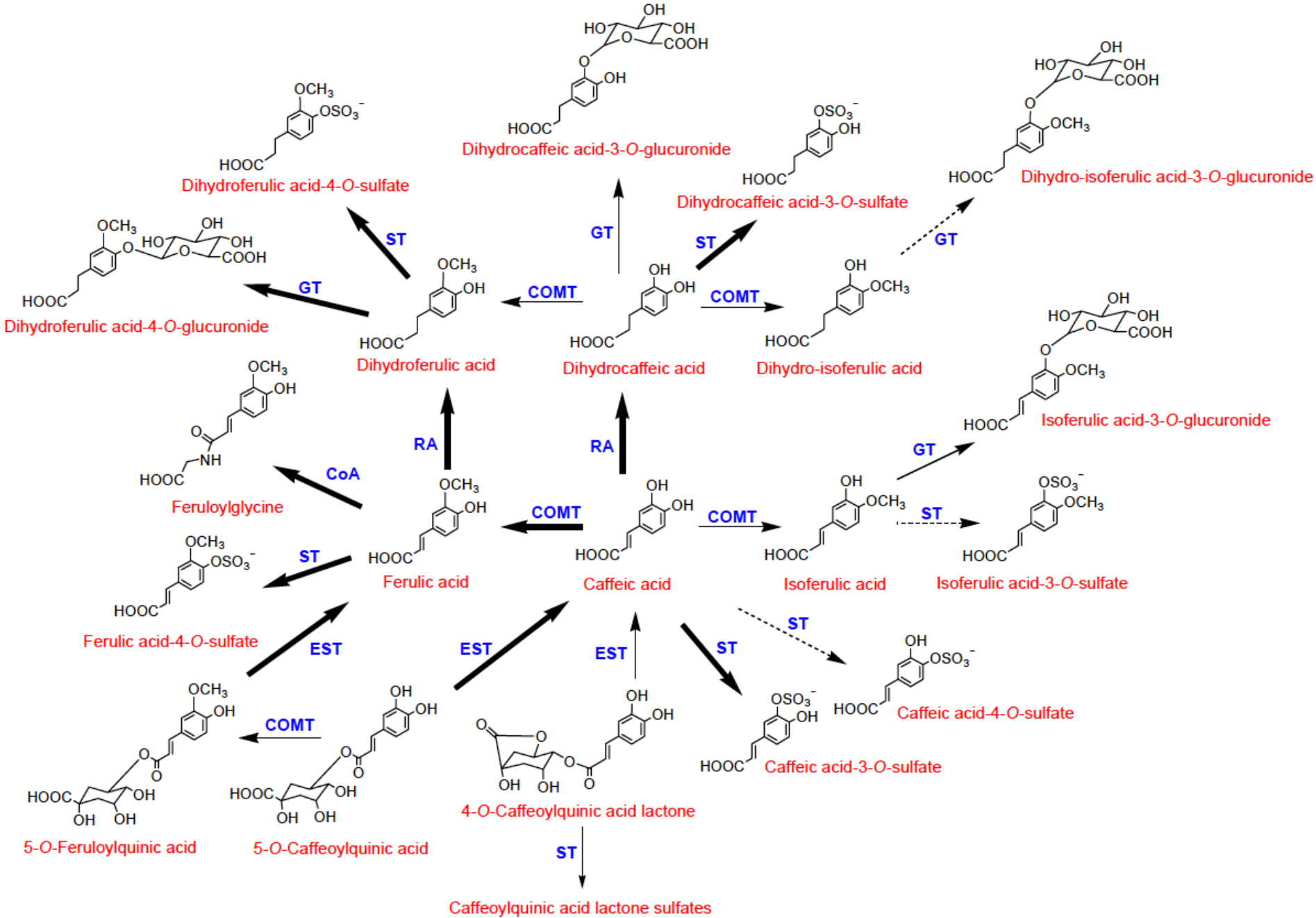


Adapted from Spencer 2003. J. Nutr. 133:

You eat berries?



You fancy a coffee?



How should we assess the effects of exposure to dietary polyphenols in vitro?[1–3]

Paul A Kroon, Michael N Clifford, Alan Crozier, Andrea J Day, Jennifer L Donovan, Claudine Manach, and Gary Williamson

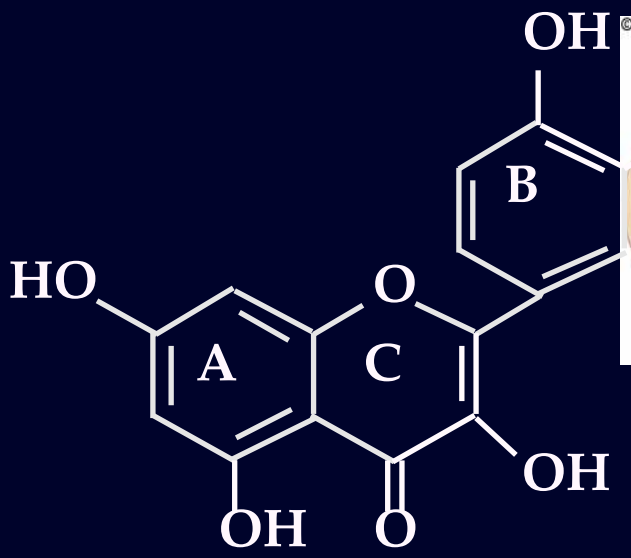
Identification and measurement of the physiologic polyphenol conjugates are key prerequisites to an understanding of the role of dietary polyphenols in human health. Acquiring such data will permit more reliable investigation of many phenomena by using cost-effective in vitro models. In the long term, the application of advanced metabolomic approaches and nanotechnologies has the potential to significantly advance our understanding in this area.

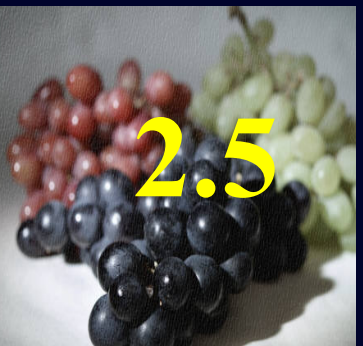
We strongly recommend that all experiments using in vitro models to study biological responses to dietary polyphenols use only physiologically relevant flavonoids and their conjugates at appropriate concentrations, provide evidence to support their use, and justify any conclusions generated. When authors fail to do this, referees and editors must act to ensure that data obtained in vitro are relevant to what might occur in vivo.

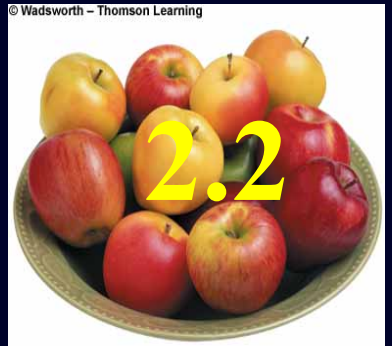
Am J Clin Nutr 2004;80:15–21. Printed in USA.

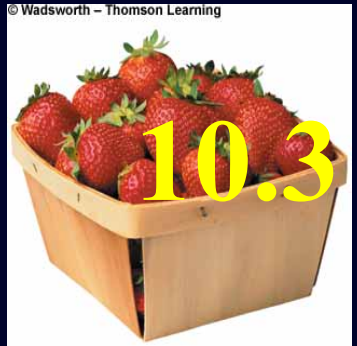
Redox ingredients

91.5

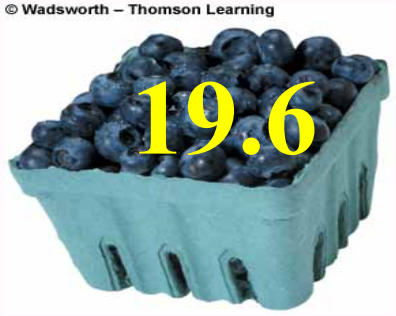








Serafini et a Nutr & Cancer 200

NEAC in Vitro	Ingested	In vivo increase
	18.200 µmol Trap (100 g)	+ 20%
	3.930 µmol Trap (200 g)	+ 12%
	1.150 µmol Trap (250 g)	+ 50%
	690 µmol Trap (80 g)	No changes

In Vitro values	% of absorption in vivo
Cumaric acid 7300 μg/250 g	1.1 %
Caffeic acid 31700 μg/250 g	0.2 %
Quercetin 12700 μg/250 g	0.5%
Vitamin C 26.7 mg/250 g	49 %

From: Serafini et al. BJN 2003

SUBJECTS

- ✓ Twelve healthy volunteers (25-35 y, 7 W 5 M)
- ✓ Non smokers, normolipidemic
- ✓ No drug or vitamin supplements

STUDY DESIGN

CK
(100 g)

Group A (n = 4)

CKM
(200 g)

Group B (n = 4)

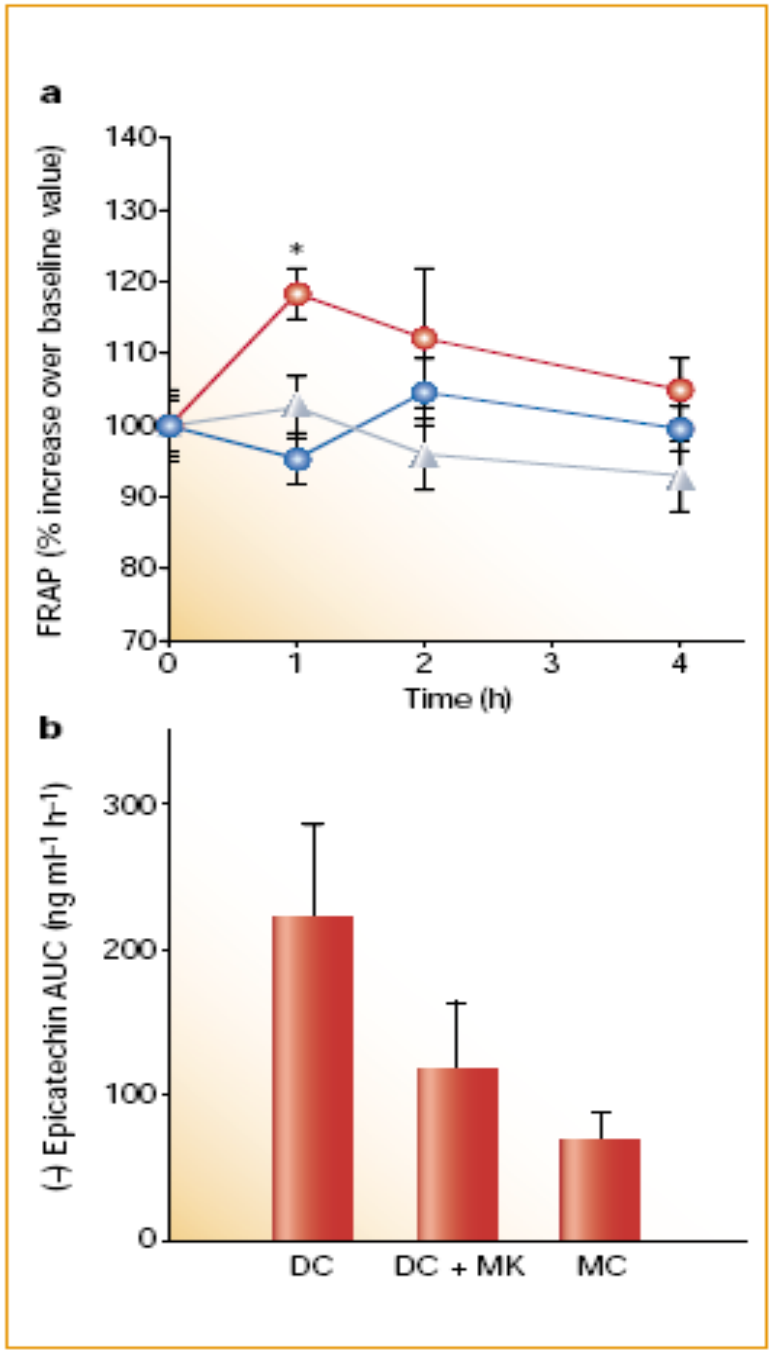
CK + M
(100 g + 200 mL)

Group C (n = 4)

Blood sampling (0, 1, 2 and 4 h.)

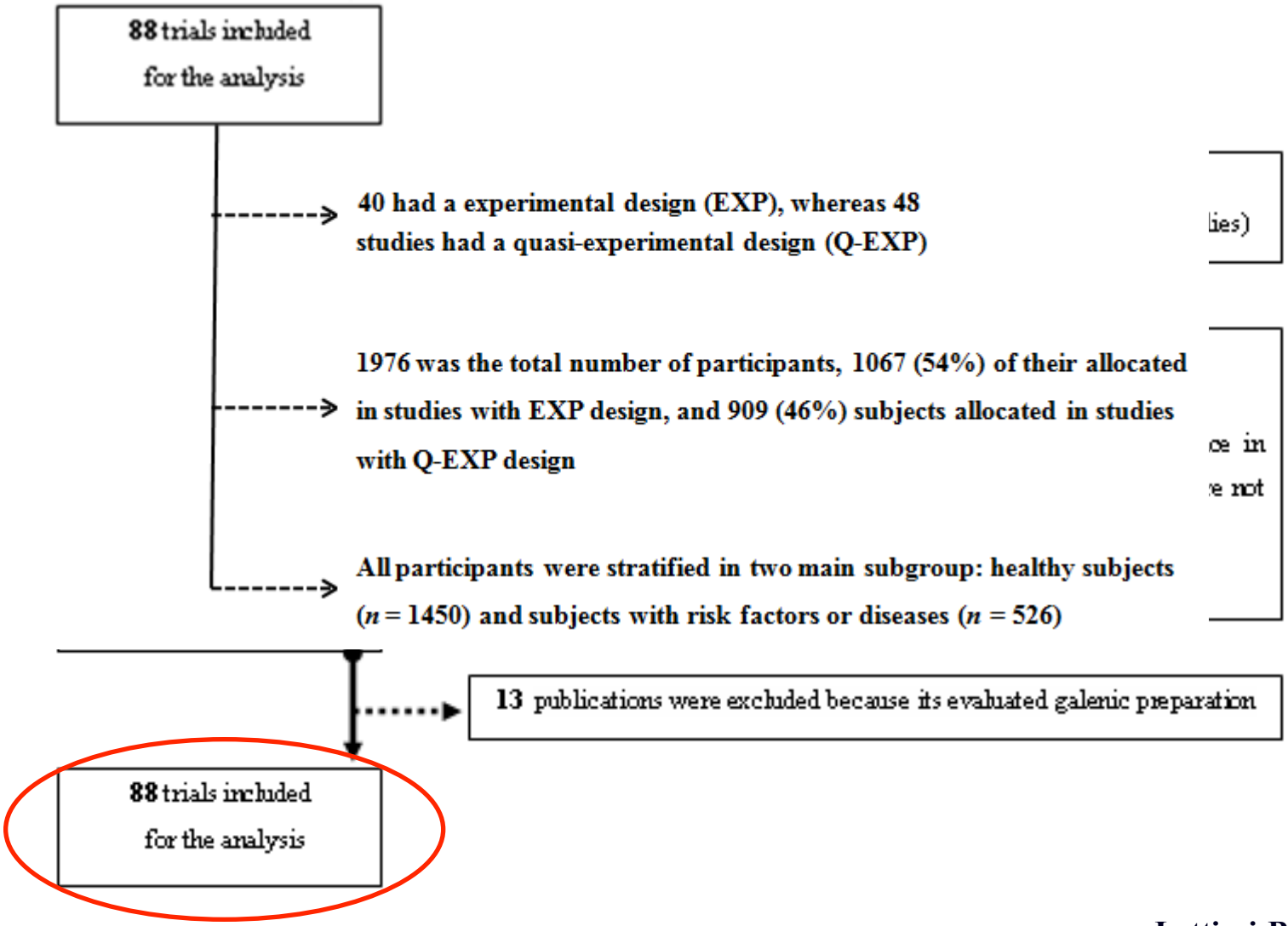
7 Days wash-out

Phases 2 and 3


a
FRAP (% increase over baseline value)
140
130
120
110
100
90
80
70
0
1
2
3
4
Time (h)
*
b
(-) Epicatechin AUC (ng ml-1 h-1)
300
200
100
0
DC
DC + MK
MC


GOT CHOCOLATE ?

EFFECTIVENESS OF PLANT-DERIVED FOOD AND BEVERAGES ON PLASMA NON ENZIMATIC ANTIOXIDANT SYSTEM: *STUDIES SELECTION & RESULTS*



Lettieri-Barbato et al. BJN 2013

EFFECTIVENESS OF PLANT-DERIVED FOOD AND BEVERAGES ON PLASMA NON ENZIMATIC ANTIOXIDANT SYSTEM: *RESULTS*

TREATMENT	Health status *(No. of participants)*	No. of interventions	Results	Effect Size SMD [95% CI]	Test for Overall Effect P Value
Beverages *(tea, fruit juices and red wine)*	Healthy *(n = 852)*	23	↔	0.177 [-0.154 to 0.508]	.296
	Risk factors *(n = 358)*	12	↑	0.765 [0.310 to 1.220]	.001
Food *(dark chocolate, fruit, vegetables and dietary pattern based on plant derived food)*	Healthy *(n = 650)*	30	↑	0.502 [0.235 to 0.769]	<.001
	Risk factors *(n = 168)*	7	↑↑	1.253 [0.685 to 1.820]	<.001
Overall	Healthy *(n = 1450)*	53	↑	0.367 [0.162 to 0.572]	<.001
	Risk factors *(n = 526)*	19	↑↑↑	0.937 [0.592 to 1.281]	<.001

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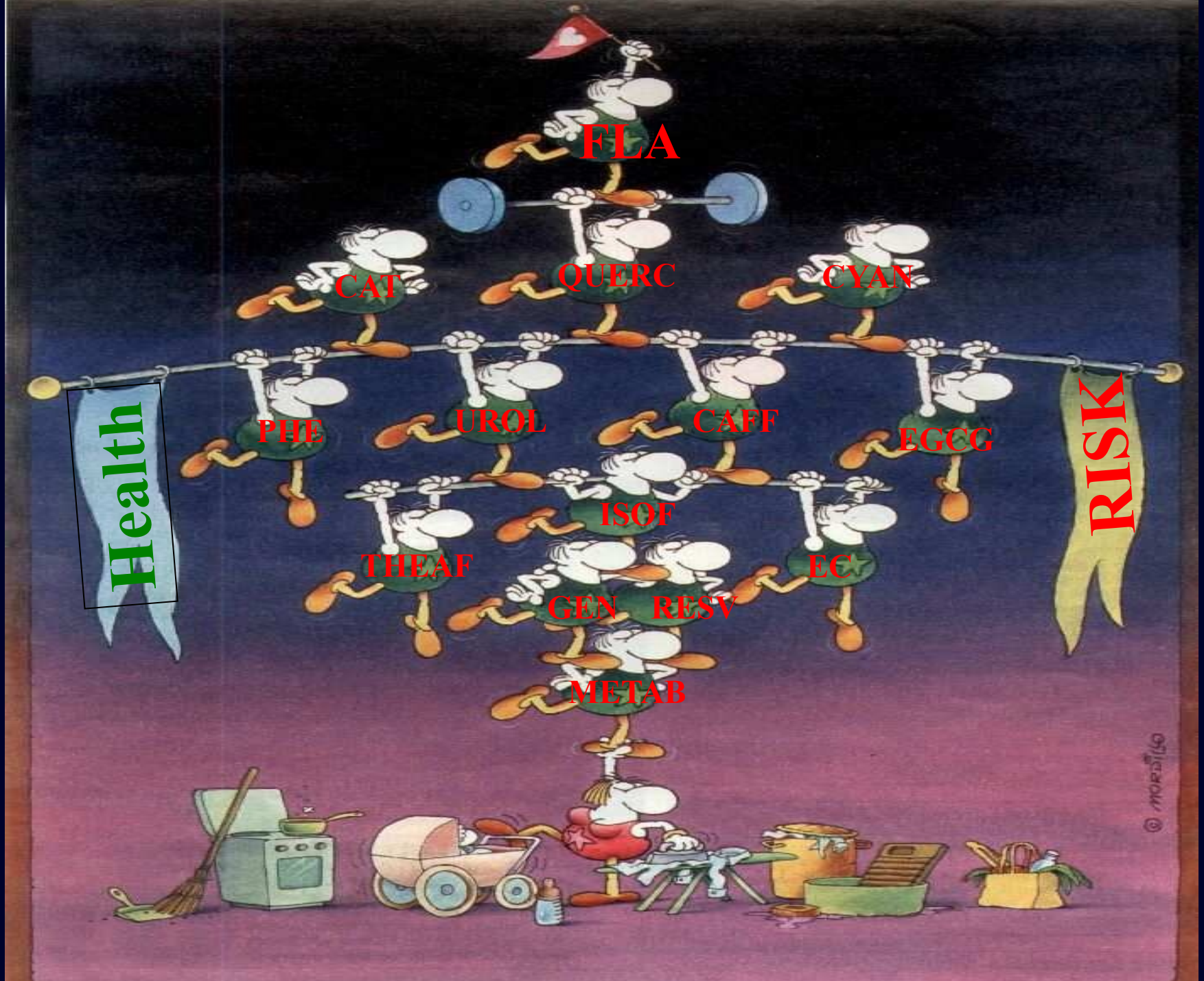
FLA
CAT
QUERC
CYAN
PHE
UROL
CAFF
EGCG
ISOF
THEAF
EC
GEN
RESV
METAB
Health
RISK

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F. Nobili, I. Garaguso, F. Ioannone, A. Raguzzini, G. Catasta, E. Toti

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The road to understanding is long and tortuous…