Supplementary Table 1: (**In the header**: factors determined to be Disease Causation factors for Breast Cancer using Disease Causation criteria. **In the most left column:** physiological parameter changes observed when the factors are present. "R" - signifies a relationship between such a physiological parameter change and a disease causing factor. Areas in gray are *intersections* of physiological parameters for few factors. *Bold frames* are final set of physiological parameters causing Breast Cancer)

Physiological Parameters	External Factors causing Breast Cancer										
	Elevated *Free Estradiol* (1cs)	Postmenopause Weight increase, BMI > 31.1 (1cs)	Cystic Breast Disease (1cs)	Using Estrogen Replacement over 57 months (1cs)	*Postmenopause high Free Estradiol* (1cs)	BRCA1, BRCA2, etc gene variants (1cs)	High Breast Density, BI-RADS code 4	Low Total Carotenes (1 cs)	Women over 50 with Low Fat intake and alcohol consumption over 24 g / day (2cs)	Anemia in Breast Cancer Patient(1 cs)	*Premenopause women with BMI Higher 26.65 kg / m^2 (1cs)*
	1	2	3	4	5	6	7	8	9	10	11
Low Beta-carotene								R			
Reduction of Provitamin A carotenoids								R			
Increase in lipid peroxidation								R			
Increased DNA strand breaks						R		R			
Estradiol increases	R			R	R		Rc		R		R
TNF-Alfa increases		R	R							R	R

	1	2	3	4	5	6	7	8	9	10	11
TNF-Alfa decreases											
IL-6 increase		R									R
Down-regulation of GATA-1										R	
Estrogen Receptor alfa (ERa)			R								
SHBG increase							R				
Progesterone receptor change			R								
Progesterone increase							R				
Cycline D1			R								
15-Hydroxyprostaglandin dehydrogenase			R								
	1	2	3	4	5	6	7	8	9	10	11
3-hydroxymethylglutaryl-CoA reductase			R								
Plasma Leptin High then in Complex Cyst			R								
Leptin in breast much			R								

	1	2	3	4	5	6	7	8	9	10	11
lower then in Plasma											
Leptin in Plasma											
Leptin Grows		R							R		
Leptin Signaling Unregulated											R
Adiponectin lower			R								
Resistin lower			R								
Vistamin / NAMPR increased											R
TNF-Alfa in breast			R								
	1	2	3	4	5	6	7	8	9	10	11
Nuclear accumulation of p54 gene											
Lysophosphatidylcholines							R				
Acylcarnitine amino acid							R				
Phosphatidylcholine amino acid							R				
Sphingomyelin							R				
Breast density				R							
GGT enzyme in liver									R		
MCV of red blood cells									R		
	1	2	3	4	5	6	7	8	9	10	11

	1	2	3	4	5	6	7	8	9	10	11
AST, ALT enzyme									**R**		
5-HTOL									**R**		
CDT									**R**		
PEth metabolite of ethanol									**R**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Fatty acid ethyl easters									**R**		
EtG											
White Adipose Tissue inflammation											**R**
Adipokines											**R**
Cytokines changes											**R**

Supplementary Table 2. (**In the header:** 4 physiological parameters which change beyond 1-sigma if simultaneously present causes Breast Cancer. **In most left column:** some of Disease Causation factors for Breast Cancer which *only* can cause it if combined together so all 4 physiological parameters required to trigger Breast Cancer are changed. **1cs**, **2cs** (on the left, stand for a cause) - means the disease causation factor changes 1 or 2 physiological parameters beyond 1-sigma as determined by Disease Causation criteria. **x -** means that an Disease Causation factor is causing a change/related to the change in physiological parameter beyond 1-sigma so this parameter becomes one of 4 causes of Breast Cancer.)

External Factors	**Physiological parameters which changes are causing a Breast Cancer (change should be beyond 1-sigma)**			
	Increased DNA strand breaks	**TNF-alfa increase**	**Estradiol increase**	**Leptin Increase**
Low Total Carotene (1cs)	**x**			
BRCA1, BRCA2, etc gene mutations (1cs)	**x**			

Premenapause women with BMI Higher 26.65 kg / m^2 (1cs)	x		
Cystic Breast disease (1 cs)	x		
Using estrogen replacement over 57 months (1 cs)		x	
Postmenapause high free estradiol (1cs)		x	
High Breast Density, (BI-RADS code 4)		x	
Women over 50 with low fat intake but **Alcohol** consumption over 24g / day (2 cs)		x	x
Anemia after cancer (1 cs)	x		
Postmenopause Weight increase,BMI > 31.1 (1cs)			x

Supplementary Table 3.(**In the header:** 4 physiological parameters changes (beyond approx. 1-sigma) which should be simultaneously present to cause Breast Cancer. **In the columns:** Disease Causation factors which are either causing the physiological change beyond 1-sigma(or physiological change present if the factor exists). Any set of few Disease Causing factors (one from each column) from each column will cause a Breast Cancer. The factors *cannot* cause Breast Cancer as standalone)

Increased DNA strand breaks	TNF-alfa increased	Estradiol Increase	Leptin level increase
Low Total Carotene (1cs)	Cystic Breast disease (1 cs)	High Breast Density, (BI-RADS code 4)	*Postmenopause* Weight increase,BMI > 31.1 (1cs)
BRCA1, BRCA2, etc gene mutations (1cs)	Anemia after cancer (1 cs)	Postmenapause high estrogen (1cs)	
	Premenopause women with BMI Higher 26.65 kg / m^2 (1cs)	Women over 50 with low fat intake but Alcohol consumption over 24g / day (2 cs)	Women over 50 with low fat intake but Alcohol consumption over 24g / day (2 cs)
		Using estrogen replacement over 57 months (1 cs)	

NOTE: the list of factors in **Table 1.3** is obviously not complete and provided as per author's knowledge of specific research, other factors can be added in the future if new research finds them, etc. At the same time the future factors as current ones will be related to the physiological parameters in the columns of the table as these parameters the real cause of a disease (the factors are only causing their change).