

The Role of MRN-100 in Fighting Cancer and Alzheimer's Disease

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The U.S. Health System is “challenged” on many fronts.....

- Compared to other industrialized countries the U.S. health care system
- Is more expensive: >\$2.0 trillion/year, 18% GDP
- Has the highest inflation: > 8%/yr
- Does not produce the best outcomes
- Is not rated highly by its citizens or doctors
- Does not cover all of its citizens: ~10% uninsured (~33 Million)

Preventive Care

We should think of new therapies for the purpose of preventive care.

Outline

1. **Bedil Ai Study: 2016 and 2017 new data**
2. **MRN-100 Exerts Anti-Cancer Activity**
 - a) Immune modulation
3. **Anti-Alzheimer's**
 - a) Introduction and Findings
 - b) Antioxidant potential
4. **Safety: is MRN-100 safe?**
5. **Conclusion**
6. **Acknowledgements**

Part I



Bedil Ai:

Bedil Ai may be useful agent for improving eye vision.

MRN-100

Compound Synthesis:

MRN-100 is obtained from phytosin, a plant extract that contains iron and neutral lipid compounds, and can be found in rice, wheat, or radish seeds. When phytosin is dispersed in distilled water, ferric chloride is added, the lipid compounds are removed, and the iron compound obtained is subjected to fractional determination with respect to bivalent ferrate and trivalent ferrate in order to generate MRN-100.

Queen Nefertiti



Nefertiti: Egyptian Queen known for her beautiful eyes

Two Different Color Eyes



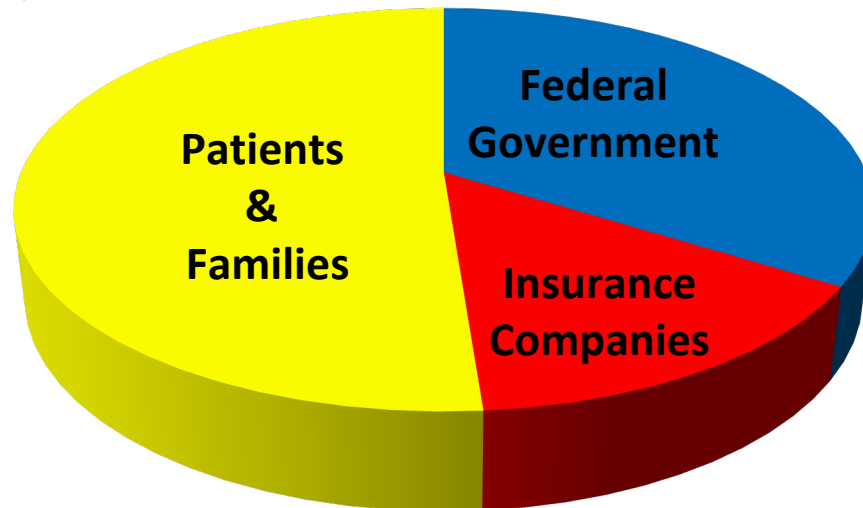
Spiders can have eight eyes



Why animals have so many eyes is still a mystery in many cases.

Paying to correct eye vision problems

- The nation's annual cost of eye and vision disorders is about \$140 billion
 - According to National Opinion Research Center specialists at the University of Chicago
- Covering the bills:



- \$238 per person per year

https://www.mesvision.com/includes/pdf_Broker/MESVision%20Facts%20and%20Statistics.pdf

<http://glassesrafter.com/information/percentage-population-wears-glasses.html>

<http://www.usatoday.com/story/news/nation/2013/06/30/vision-related-diseases-cost/2453119>

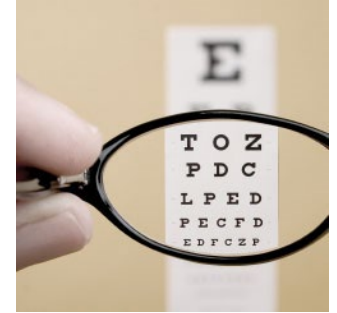
Experimental Design



Autorefractor



Manual refraction test with a instrument called **phoropter**



Bedil Ai for 1 month

2nd Eye Exam

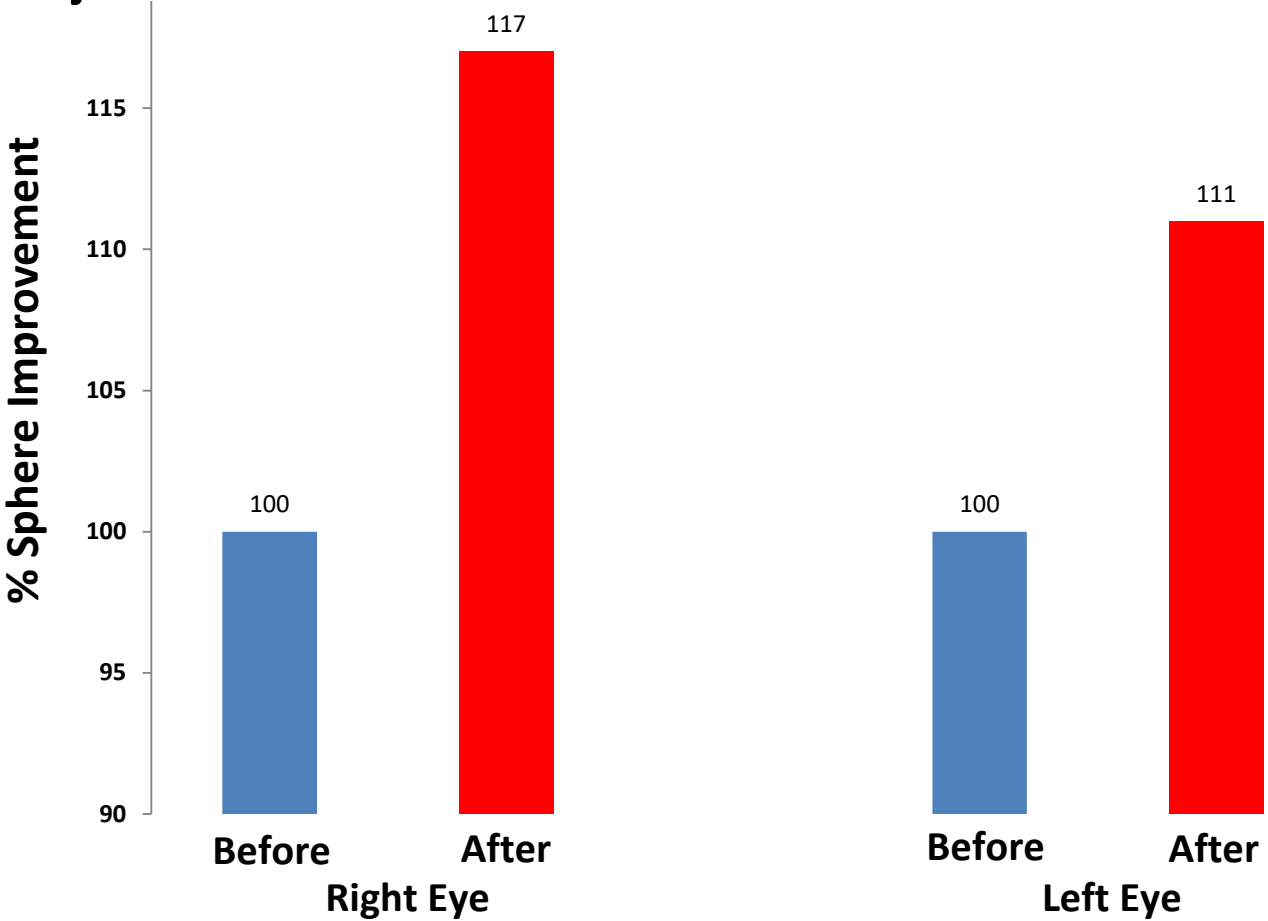
Refraction: The test that your eye doctor uses to determine your exact eyeglass prescription.



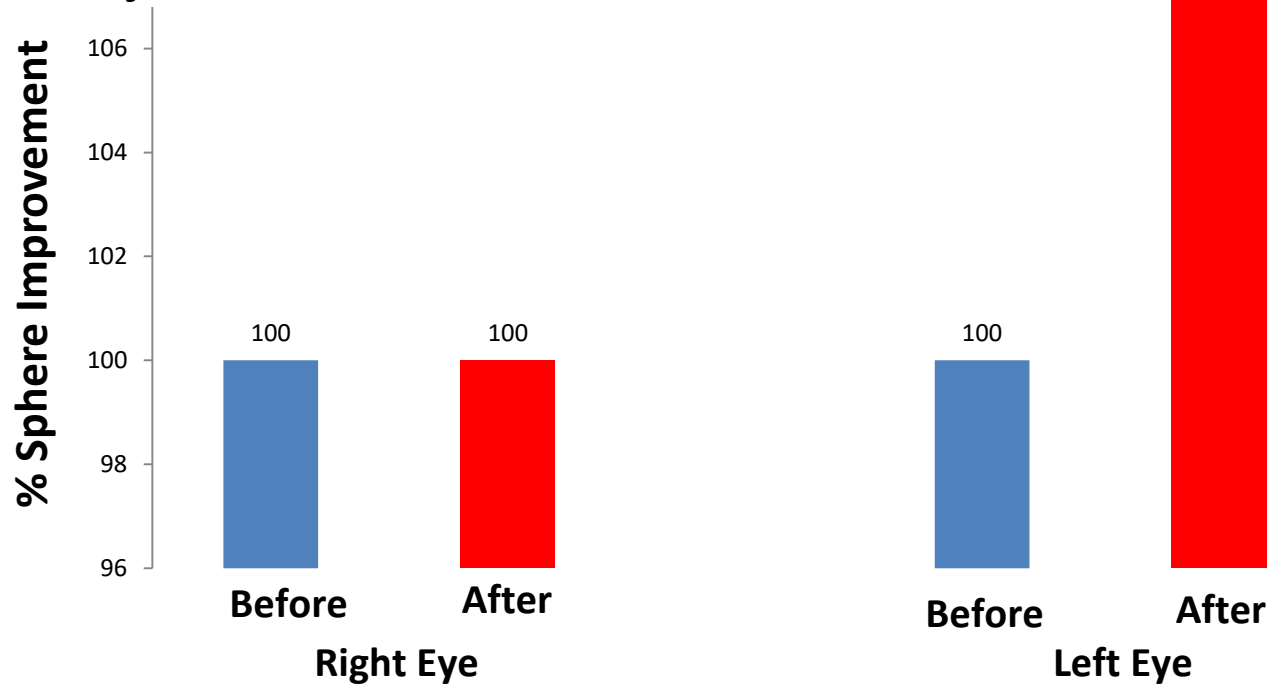
VISION

Results

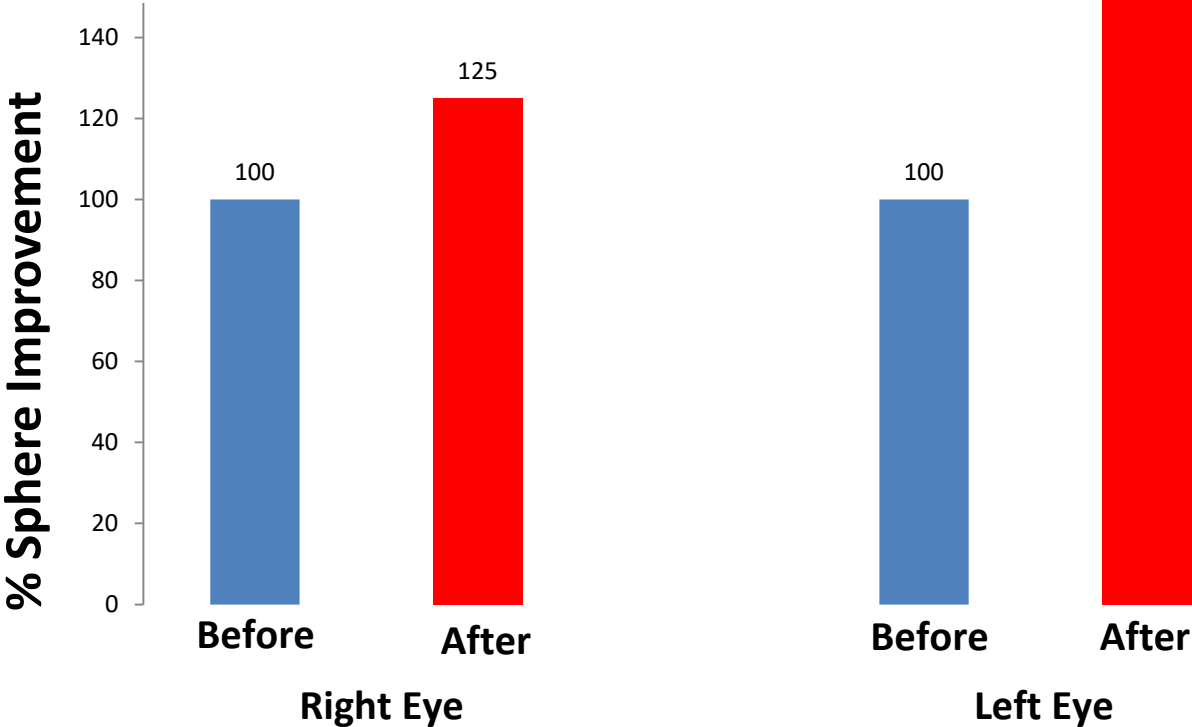
Subject 1- Female 19 Years Old



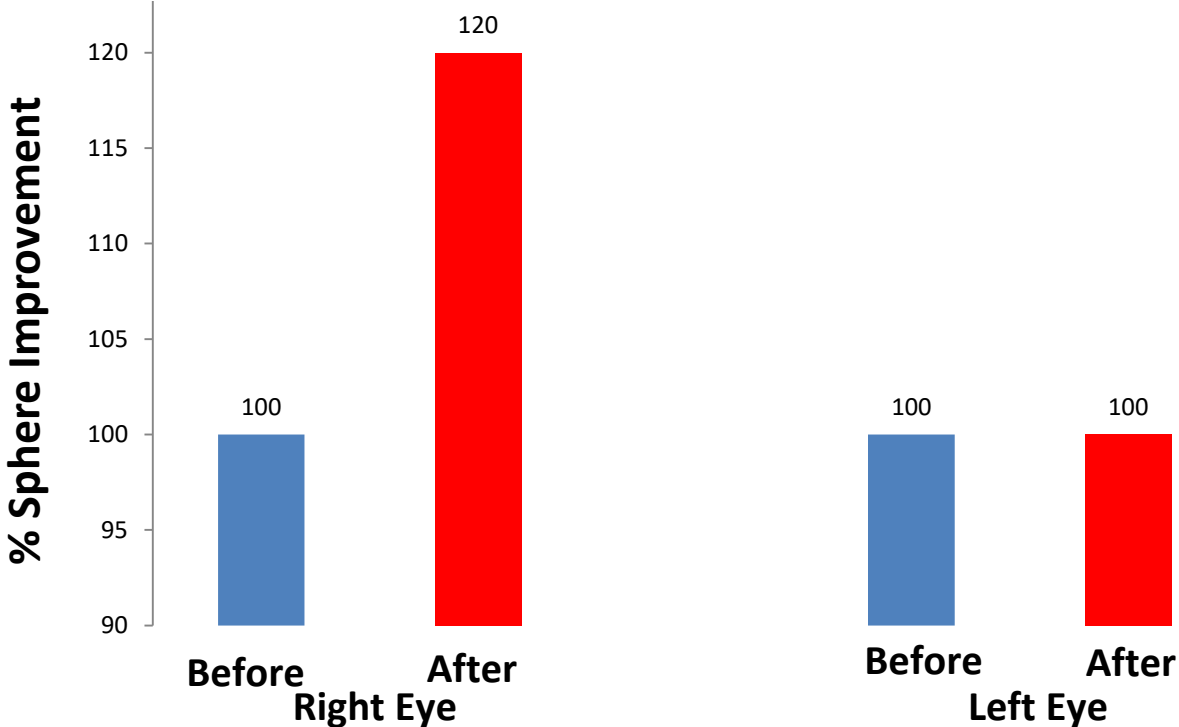
Subject 2- Female 27 Years Old



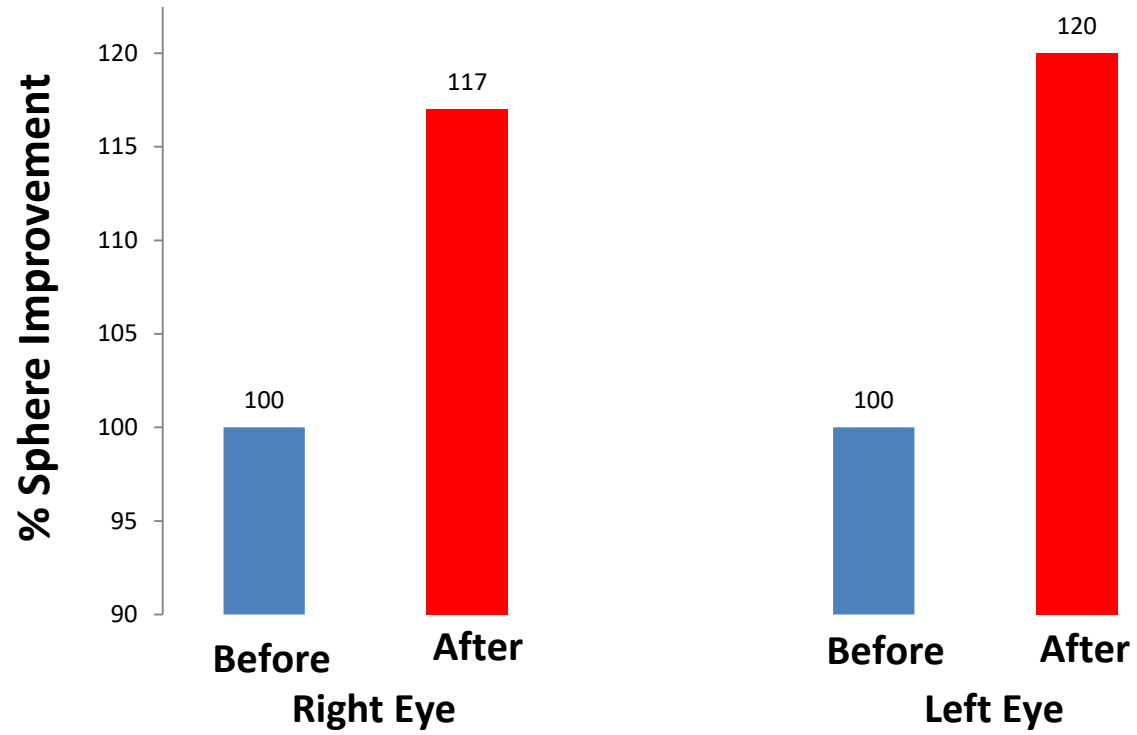
Subject 3- Male 72 Years Old



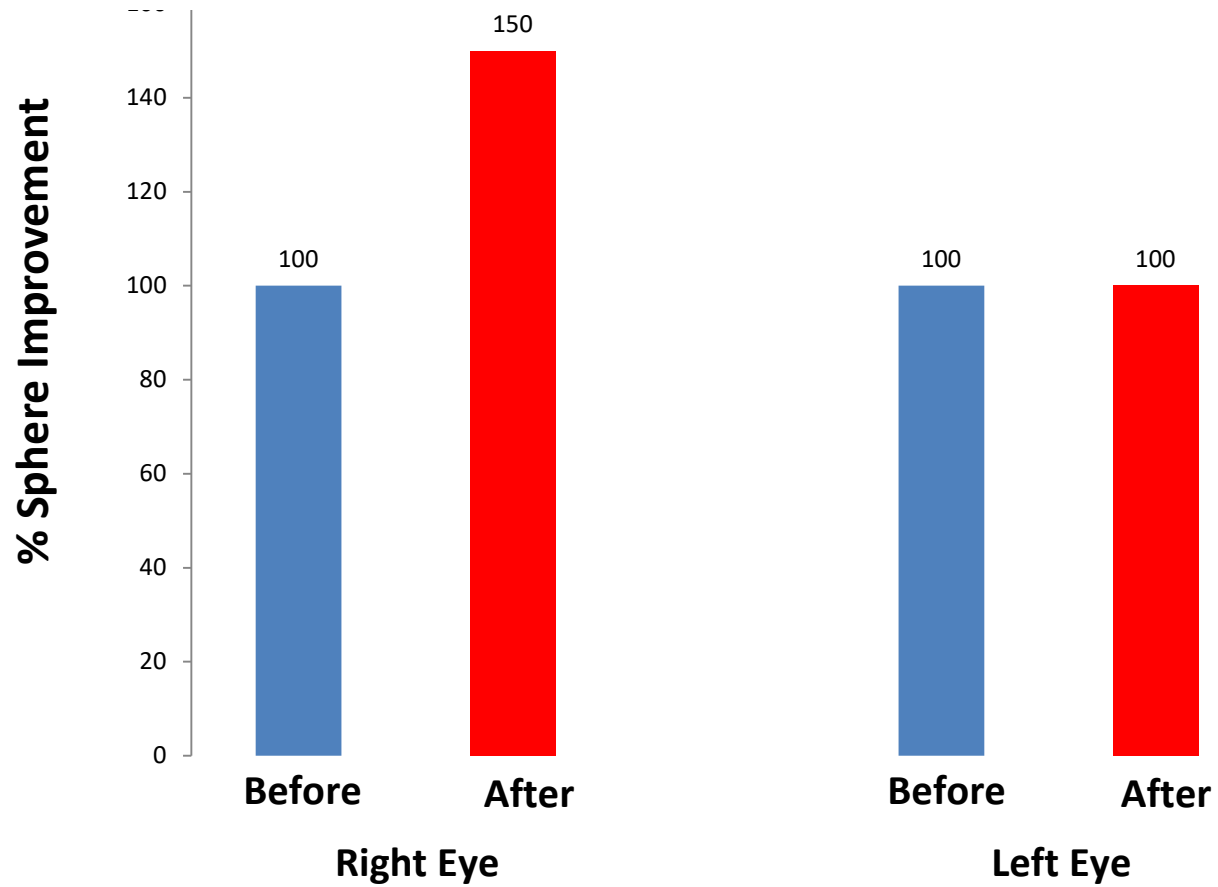
Subject 4- Male 79 Years Old



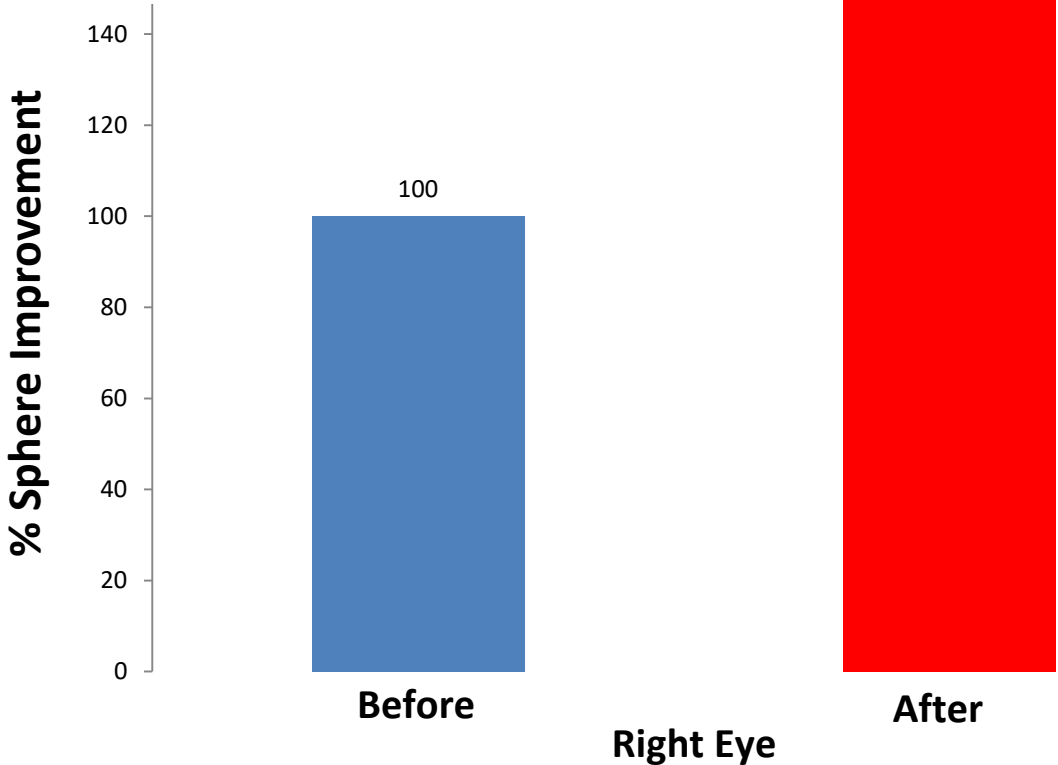
Subject 8- Female 70 Years Old



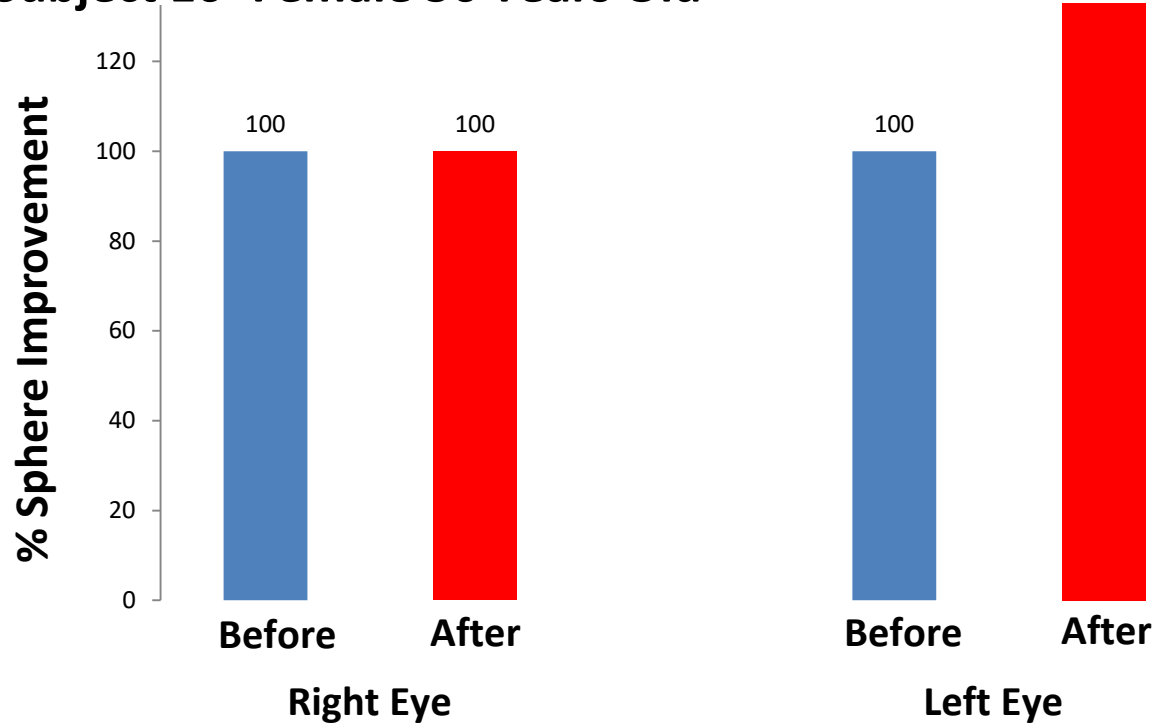
Subject 9- Male 67 Years Old



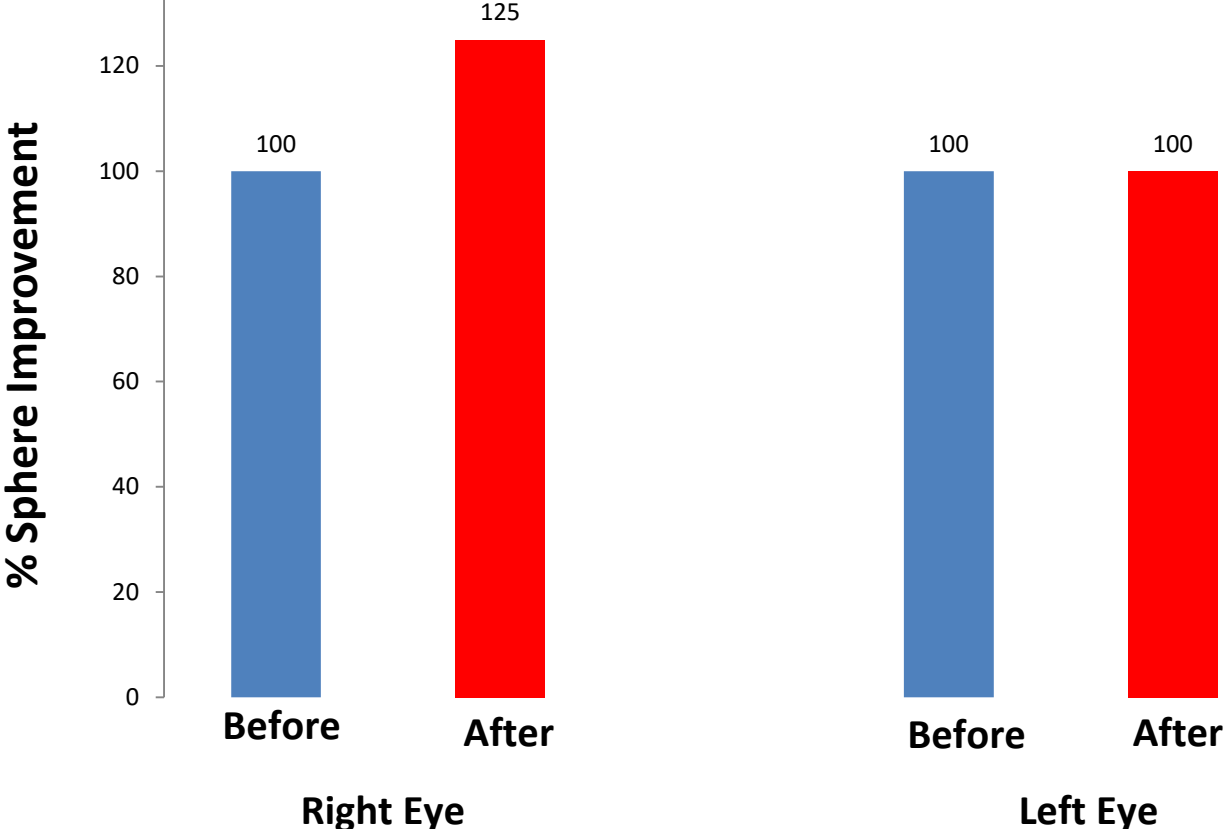
Subject 10- Female 66 Years Old



Subject 16- Female 56 Years Old

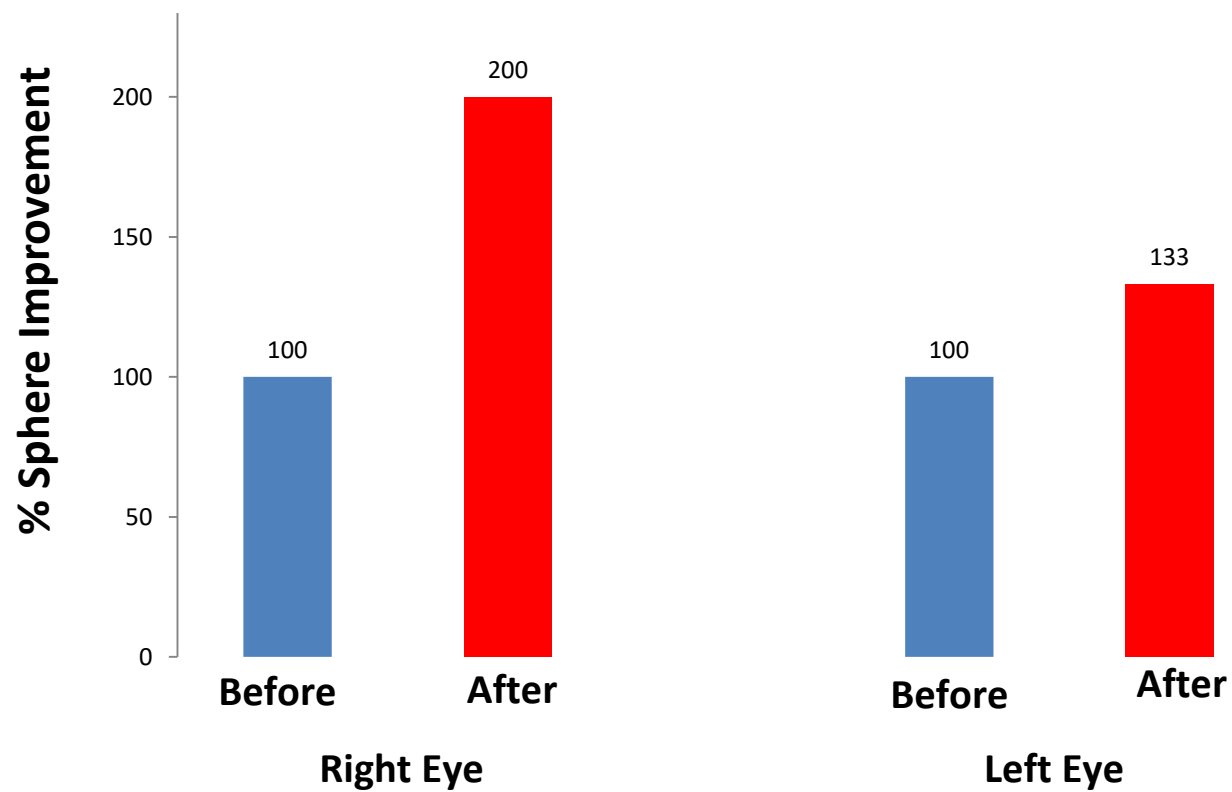


Subject 19- Female 58 Years Old

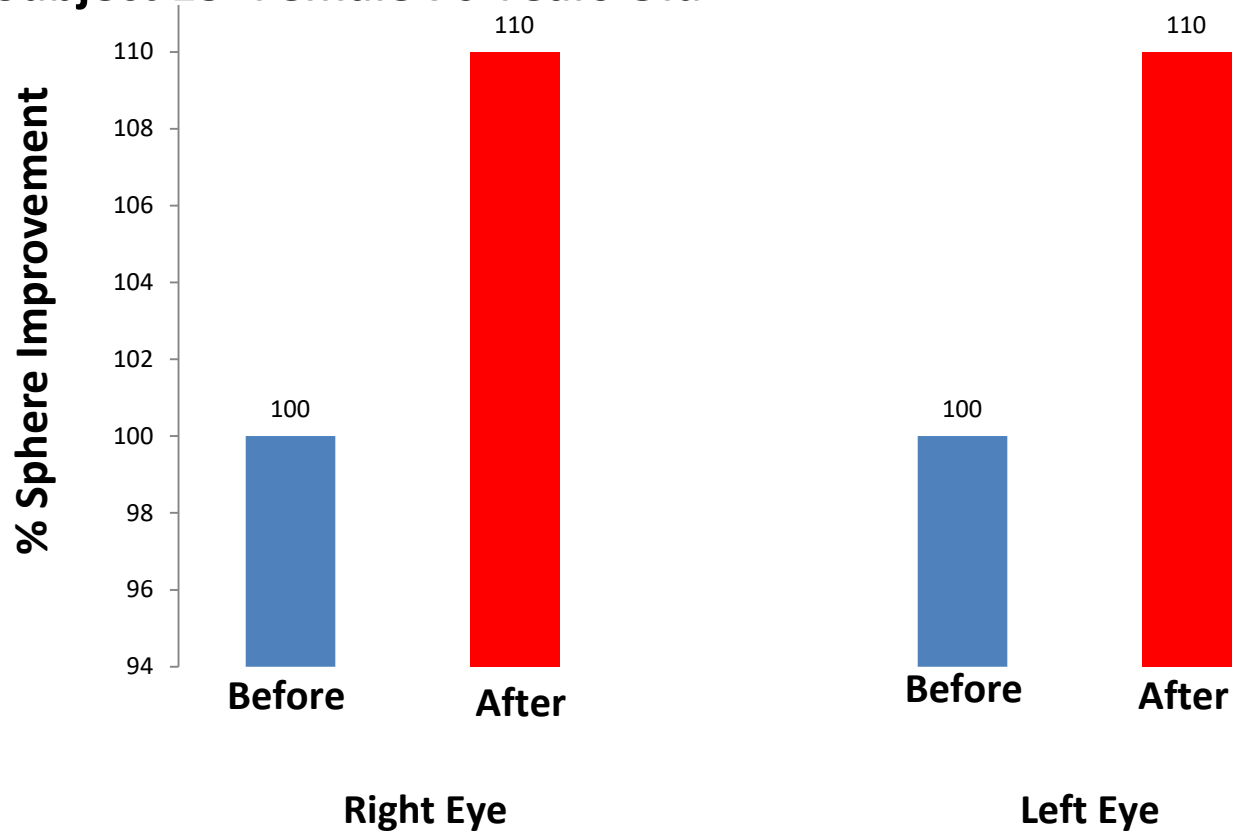


New Data 2017

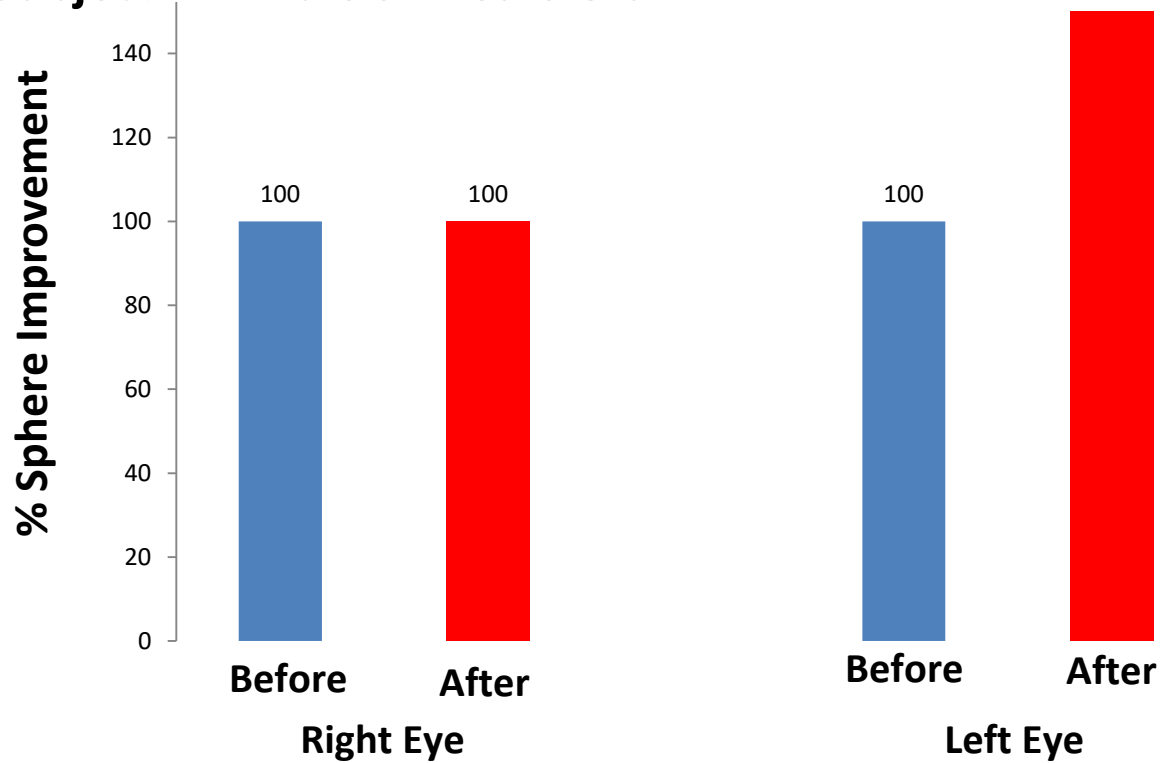
Subject 12- Female 69 Years Old



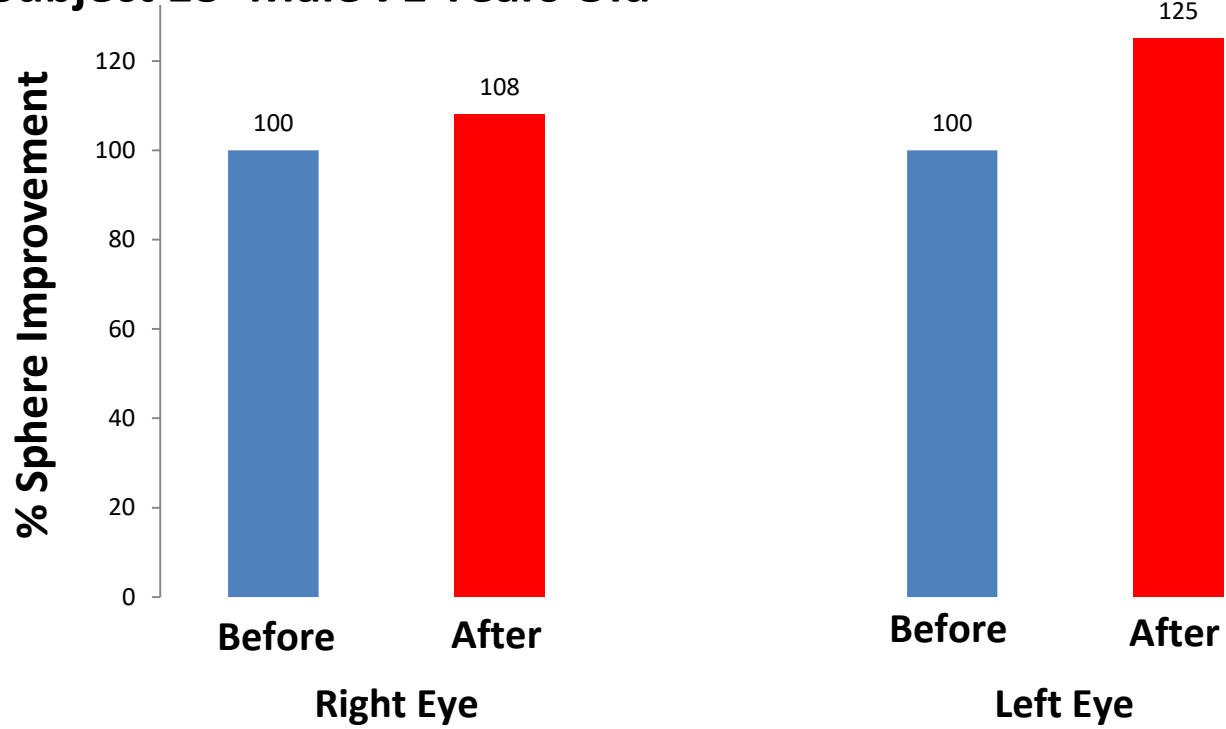
Subject 13- Female 70 Years Old



Subject 17- Male 91 Years Old

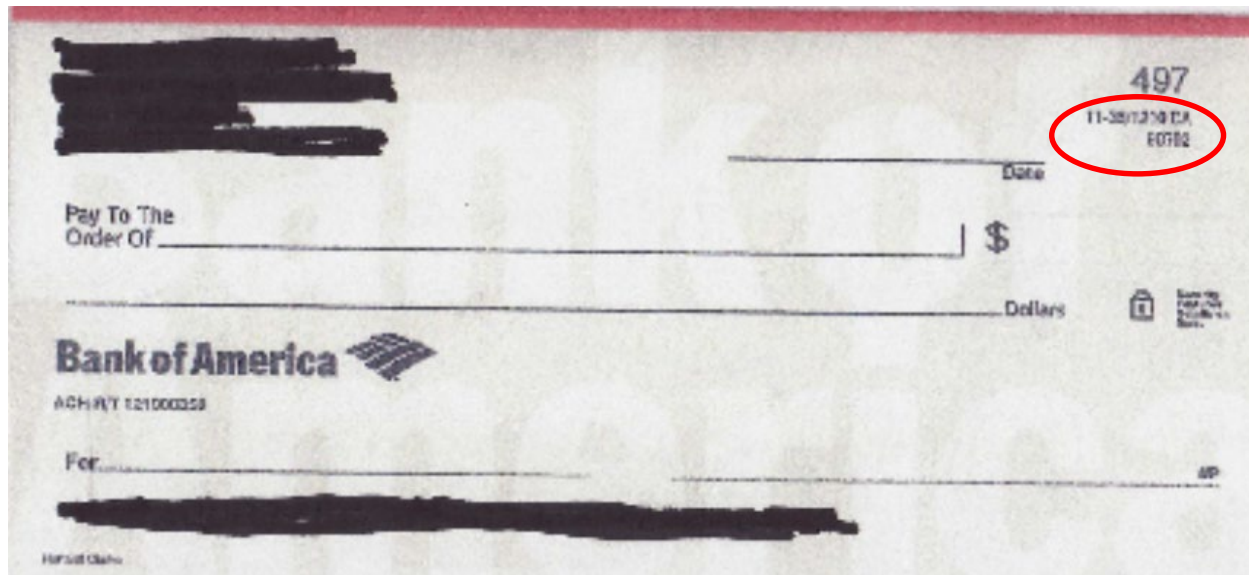


Subject 18- Male 71 Years Old



Patient 10 Personal Comments:

After one month of using spray, could read tiny text on personal check (underneath check number in upper right-hand corner). Example: 497 11-35/1210 CA 90792.



Patient 17 Personal Comments:



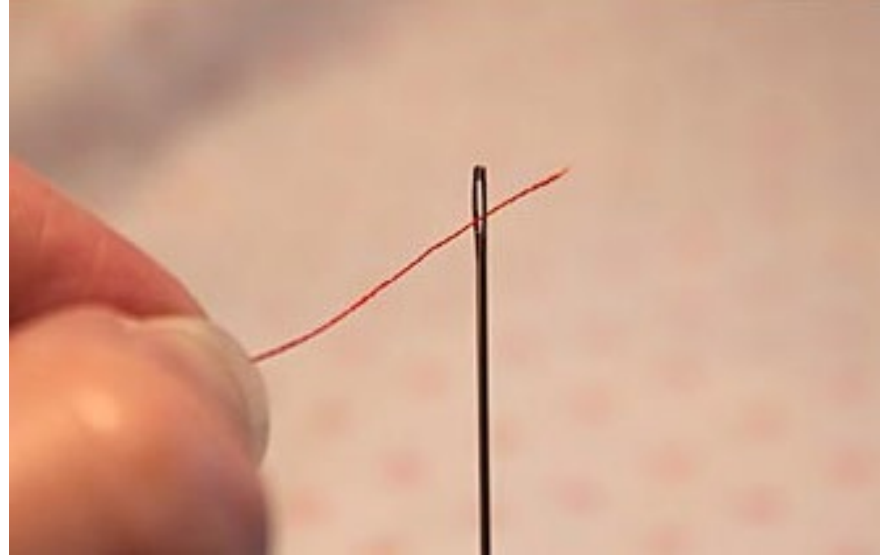
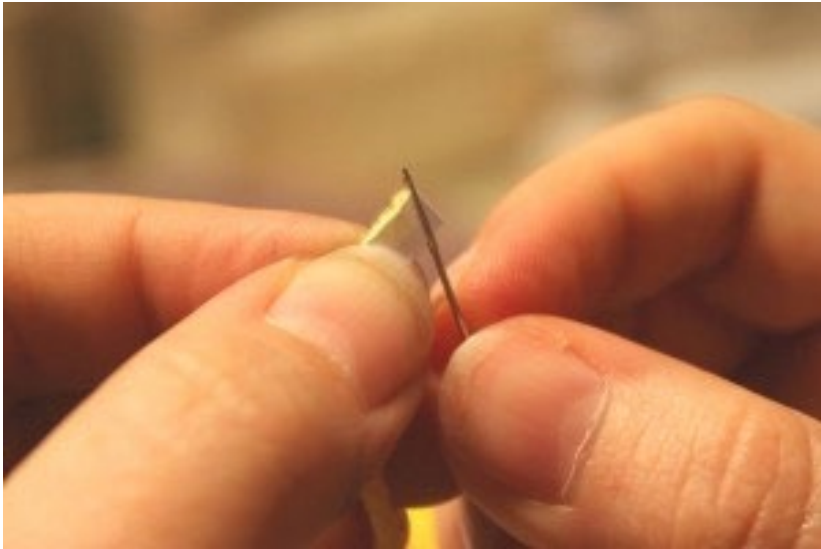
After using spray, tears stopped running and was able to see golf ball more clearly.

Patient 18 Personal Comments:



Dr. said glasses were too strong after 1 month and needed to be changed.

Patient 19 Personal Comments:



Says that after using spray for one month, can now thread a needle (before she could not).

Additional Comments By Subjects in 2017:

Subject 13's doctor noted no eye pressure (glaucoma) after 1 month treatment

Subjects 15 and 16 said they noticed the eye pressure improved

Conclusion

New data support earlier results that Bedil Ai may be a useful agent for improving eye vision

A scenic landscape featuring a range of blue mountains under a sky filled with soft, white clouds. The mountains are layered, creating a sense of depth and distance. The overall color palette is dominated by various shades of blue and white, giving it a calm and serene appearance.

Break

Part II



An iron-based compound, MRN-100, Exerts Anticancer Effect

Dr. Mamdooh Ghoneum

Department of Surgery, Drew University of
Medicine and Science, Los Angeles, CA, U.S.A.

Outline

- I. Does MRN-100 Exert Anti-Cancer Activity?**
 - A. Esophageal and gastric cancer**
 - B. Head and neck cancer**
 - C. Leukemia**
 - D. Skin cancer**
- II. Mechanism that involves immune modulation**



PART I: The War on Cancer



Cancer is not a new disease



Pharaoh Tutankhamun



Nefertiti's Bust









SHARE



275



469



Ancient affliction. A high-resolution CT scan of the lumbar spine region of a 2150-year-old Egyptian mummy has just revealed small, round lesions—the oldest case of metastatic prostate cancer in ancient Egyptians.

(mummy)MNA / DDF - Instituto dos Museus e da Conservação, I.P., Lisbon; (CT, inset) LMP / IMI - Imagens Médicas Integradas, Lisbon

Mummy Has Oldest Case of Prostate Cancer in Ancient Egypt

By [Heather Pringle](#) | Oct. 26, 2011, 5:54 PM



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SCIENCE 03/25/2015 12:53 pm ET

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Oldest Evidence Of Breast Cancer Seen In Ancient Egyptian Skeleton



By Macrina Cooper-White



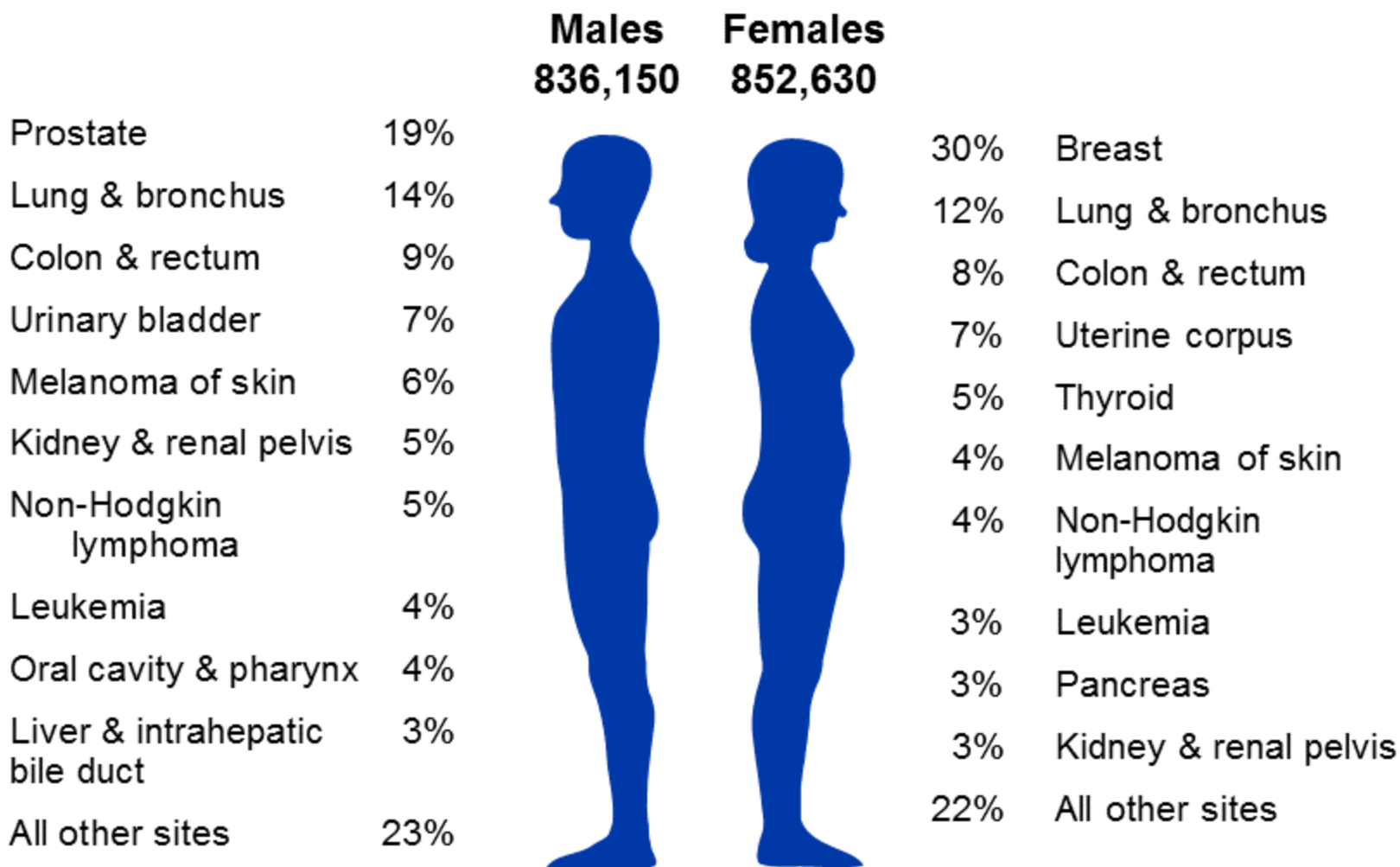
The bones date back 4,200 years and bear signs of “the [typical destructive damages](#) provoked by the extension of a breast cancer as a metastasis in the bones,” according to a written statement issued by Egypt’s Ministry of Antiquities.

“War on Cancer” 1971



**\$89 BILLION
ANNUALLY
=\$89,000,000,000**

Estimated New Cancer Cases* in the US in 2017



*Excludes basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder.

Total U.S. cancer deaths (1970 - 2017)

- 1970: ~330,000
- 2017: ~600,000

Chemotherapy and Radiation Therapy

1. Toxic
2. Immune-suppressive
3. Mutagenic
4. Carcinogenic
5. Exhibit an indiscriminate killing that involves cancer cells and many normal cells



**We are in great need for new,
effective, non-toxic agents for
the treatment of cancer**



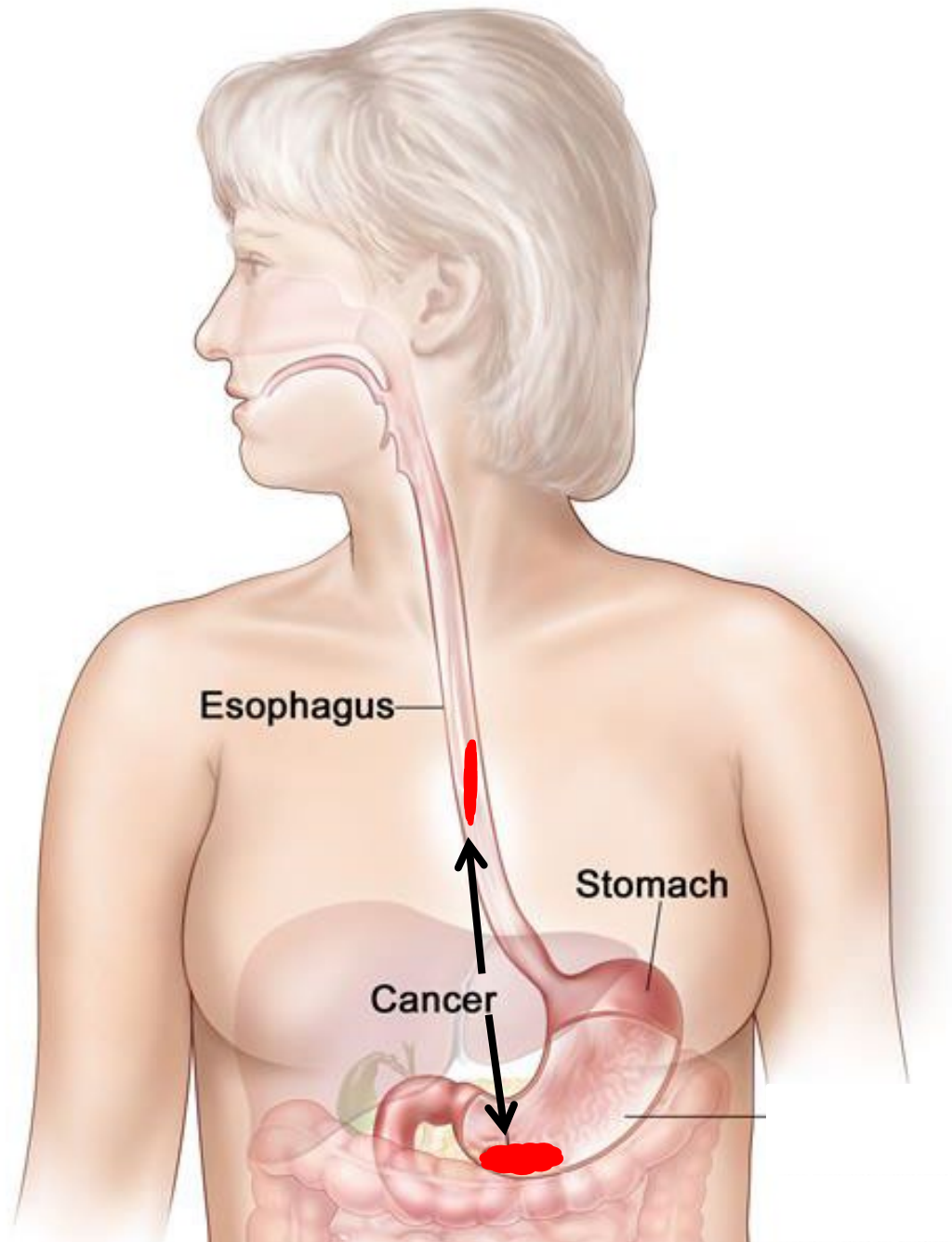
An iron-based compound (MRN-100)

MRN-100 was provided by ACM Co., Ltd., Japan

Does MRN-100 Exert Anti-Cancer Activity?



**MRN-100 protects against
chemical-induced
esophageal and gastric
cancer in Wistar rats.**

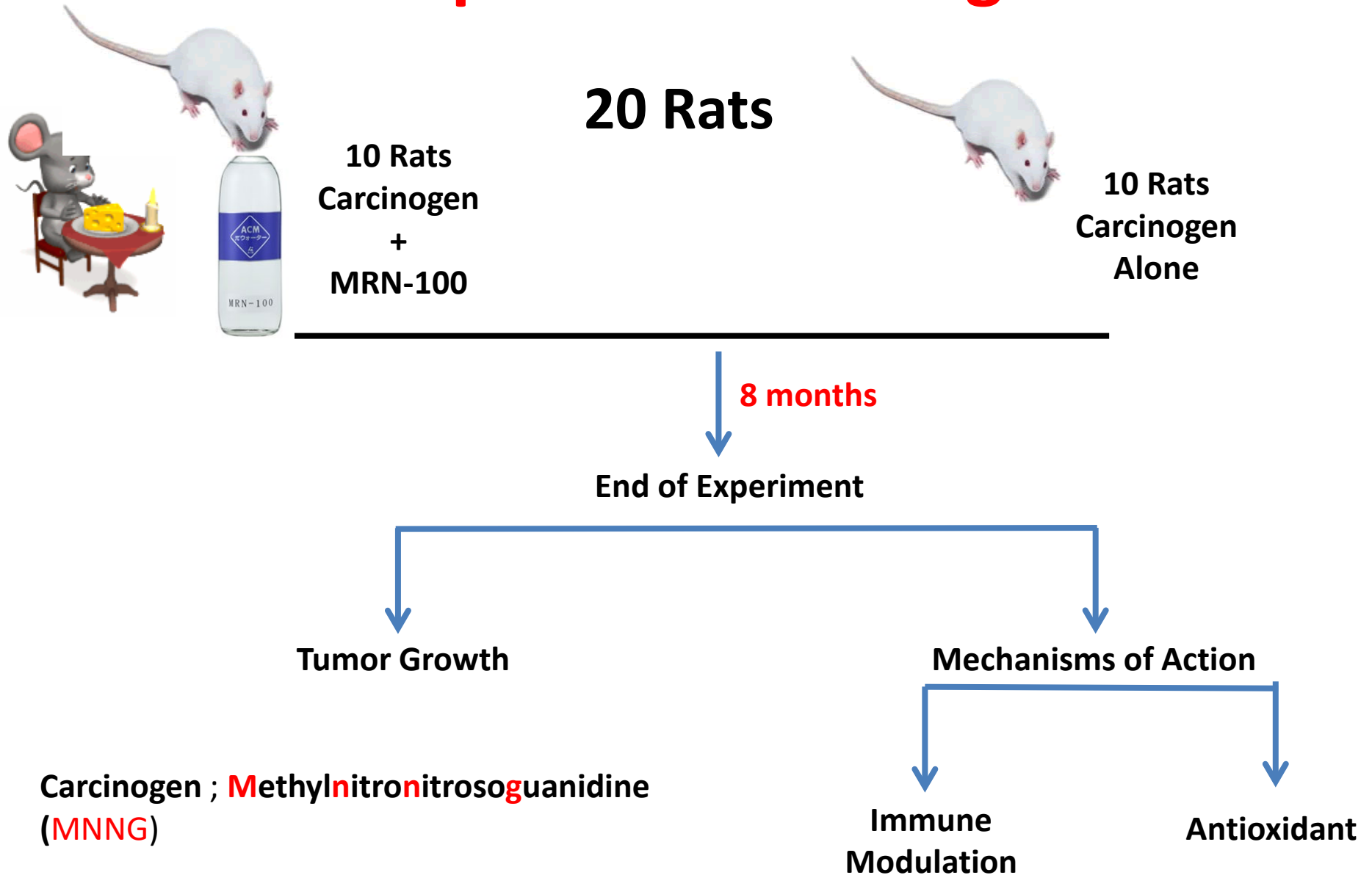


Did You Know ?



1. Gastric and esophageal cancers are two leading causes of cancer-related deaths throughout the world
2. In Japan in 2013, approximately **60,000** total people had gastric cancer and **17,500** new cases of esophageal cancer were diagnosed.
3. In the United States in 2013, approximately 40,000 people were diagnosed with esophagus or stomach cancer.

Experimental Design





RESULTS

Glandular dysplasia and adenocarcinoma in gastric tissue

Control Group

Carcinogen (2 weeks)

10 rats



8 months



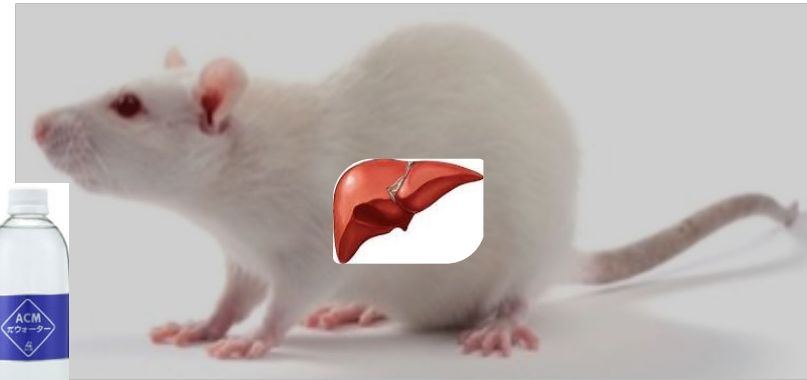
MRN-100 Group

Carcinogen (2 weeks)

10 rats



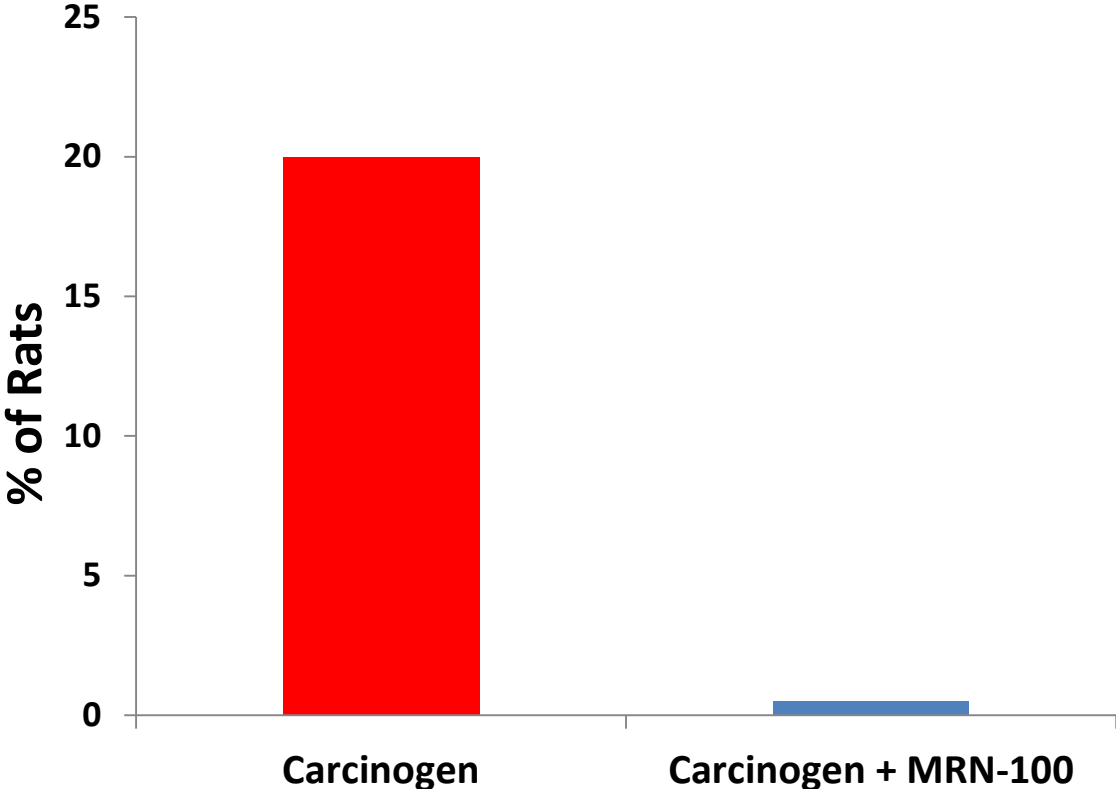
8 months



Carcinogen MNNG (N-methyl-N'-nitro-N-nitrosoguanidine) 200 mg/kg daily

Sodium Chloride 1mL/rat every 3 days

% of rats with glandular dysplasia and adenocarcinoma in gastric tissue



Squamous dysplasia or squamous cell carcinoma in esophageal tissue

Control Group

Carcinogen (2 weeks)

10 rats



8 months



MRN-100 Group

Carcinogen (2 weeks)

10 rats



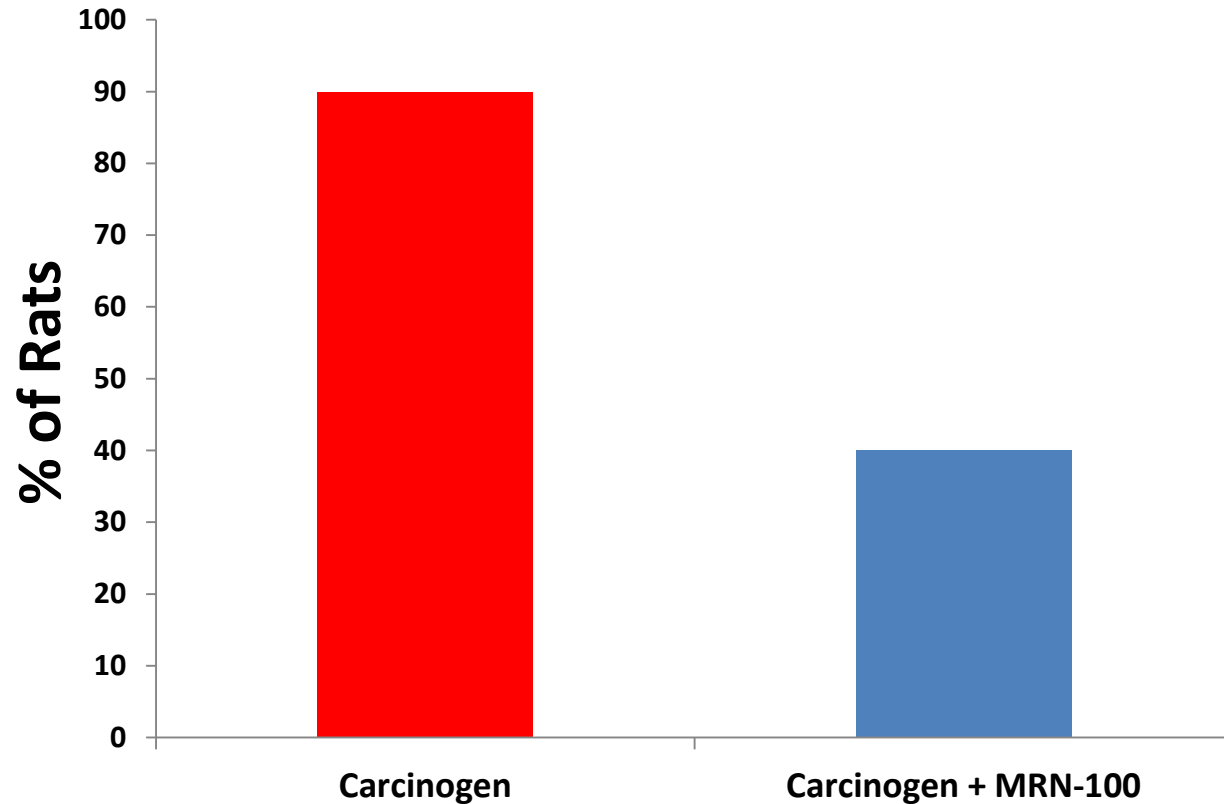
8 months



Carcinogen MNNG (N-methyl-N'-nitro-N-nitrosoguanidine) 200 mg/kg daily

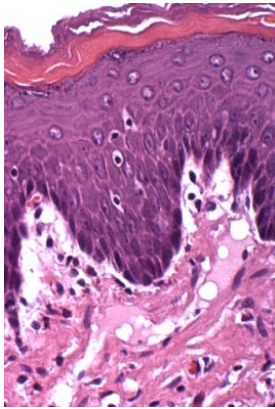
Sodium Chloride 1mL/rat every 3 days

% of rats with squamous dysplasia or squamous cell carcinoma in esophageal tissue



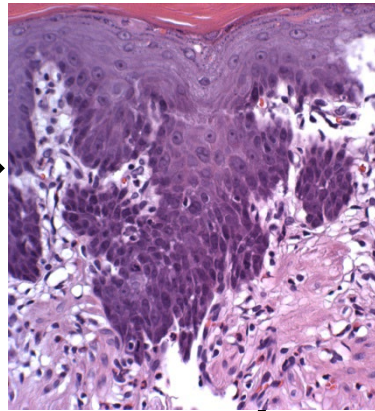
Sequence of esophageal cancer development

Normal



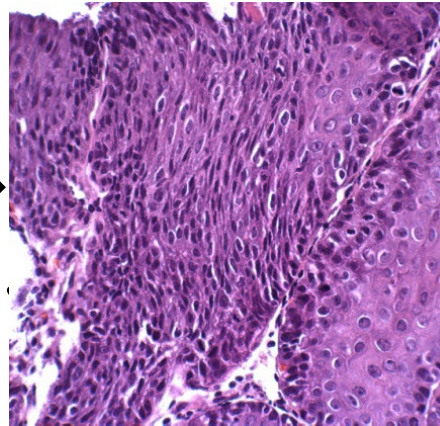
1-mild
squamous
dysplasia

1



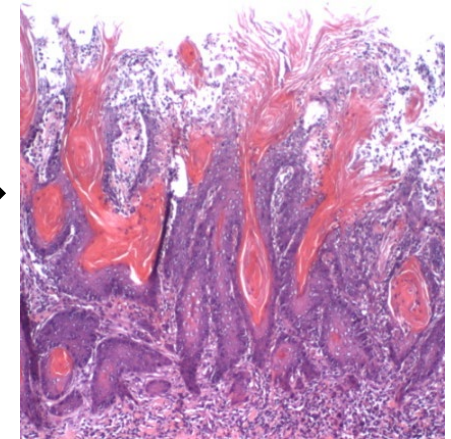
2-high grade
squamous
dysplasia

2



3- squamous
cell
carcinoma

3



Carcinogen MNNG (N-methyl-N'-nitro-N-nitrosoguanidine) 200 mg/kg daily

Sodium Chloride 1mL/rat every 3 days

Experimental Design for gastric cancer

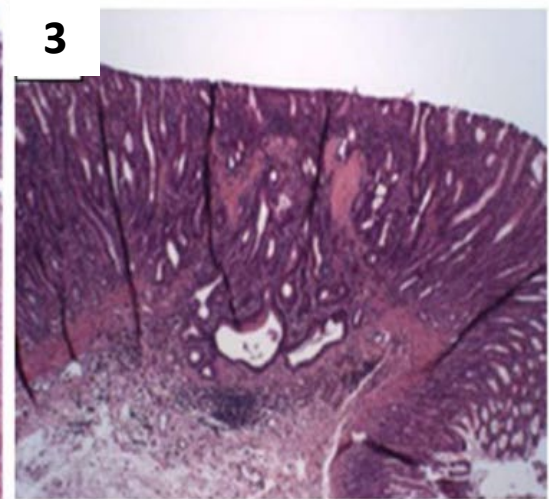
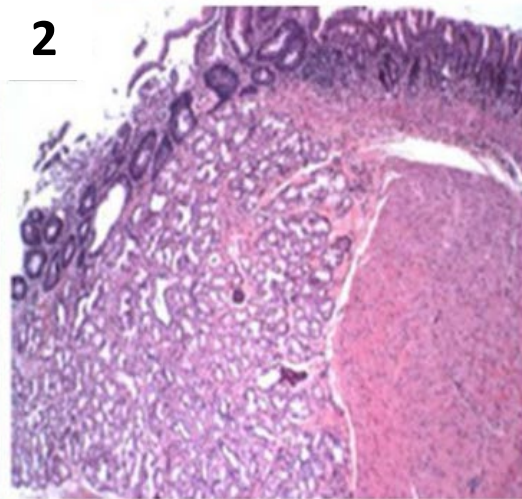
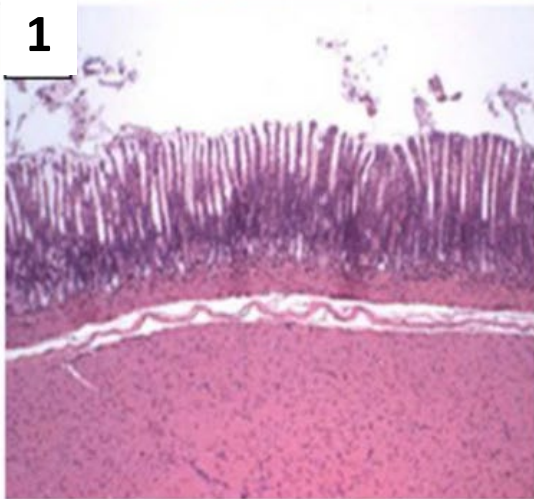
Normal



Mild squamous
dysplasia



High grade squamous
dysplasia



Research Paper

Hydroferrate Fluid, MRN-100, Provides Protection against Chemical-Induced Gastric and Esophageal Cancer in Wistar Rats

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2. Department of Zoology, Faculty of Science, University of Mansoura, Mansoura 35516, Egypt.
3. Drug and Radiation Research Department, National Center for Radiation and Research Technology, P.O. Box 29 Nasr City, Cairo, Egypt.
4. Department of Internal Medicine, Charles Drew University of Medicine and Science, 1731 E. 120th Street, Los Angeles, CA 90059, USA.
5. Department of Pathology, Charles Drew University of Medicine and Science, 1731 E. 120th Street, Los Angeles, CA 90059, USA.

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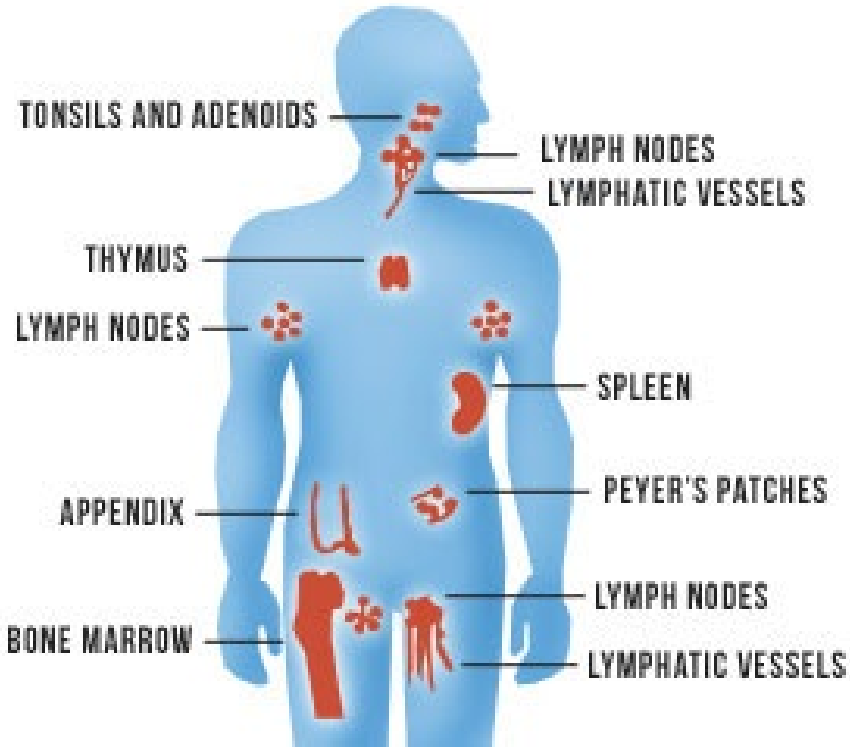
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Received: 2014.09.19; Accepted: 2014.12.09; Published: 2015.01.28

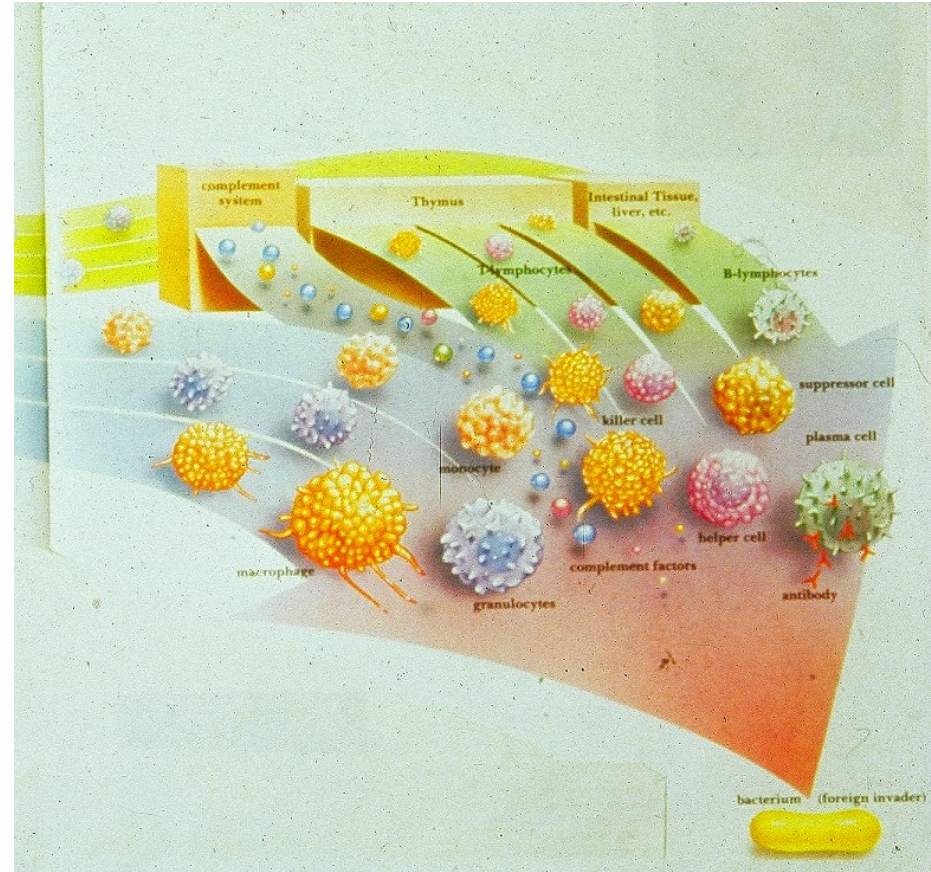
The major problem concerning natural anti-tumor agents is to define their mechanisms of action.

Immune Modulation

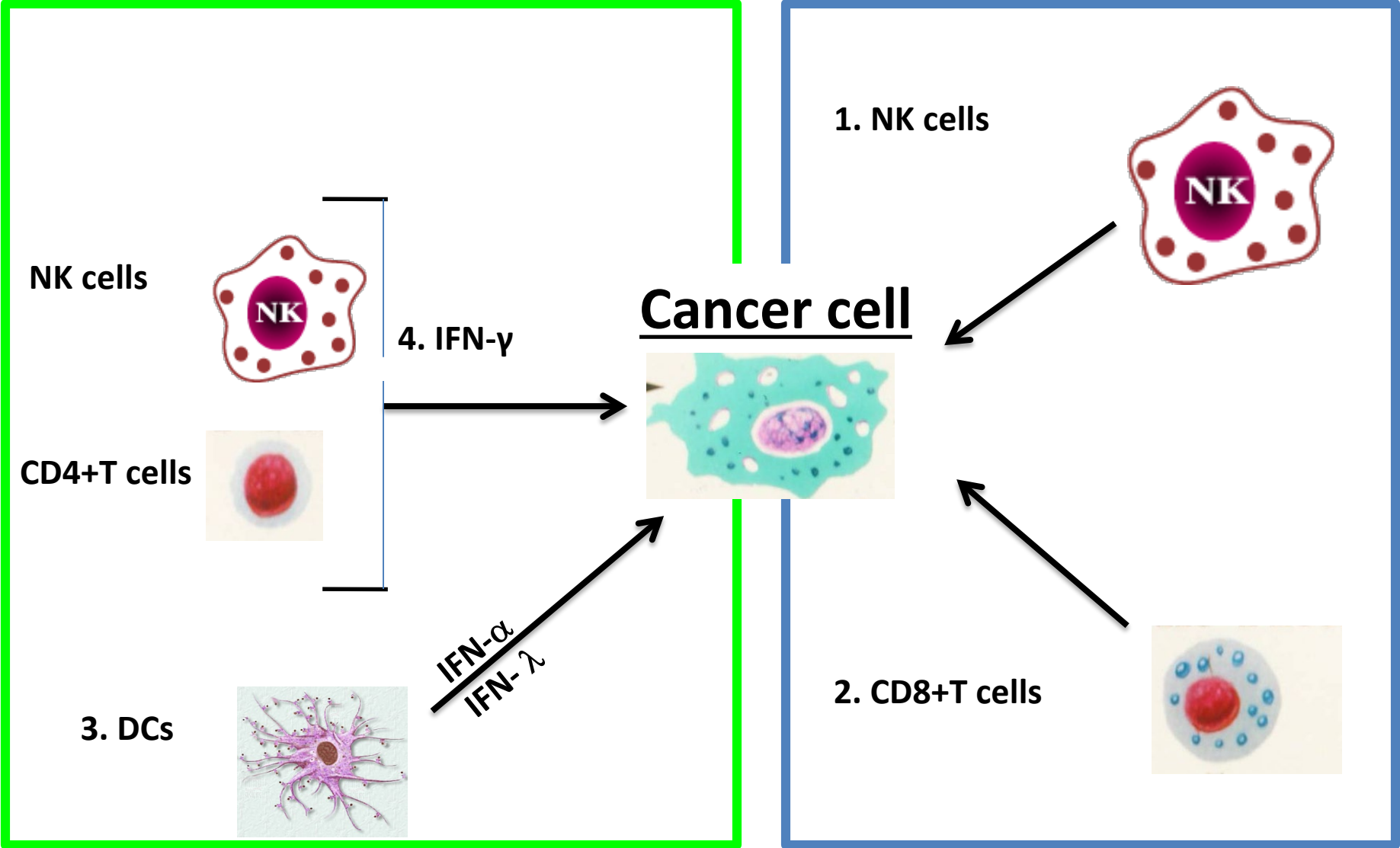
1. Immune tissues



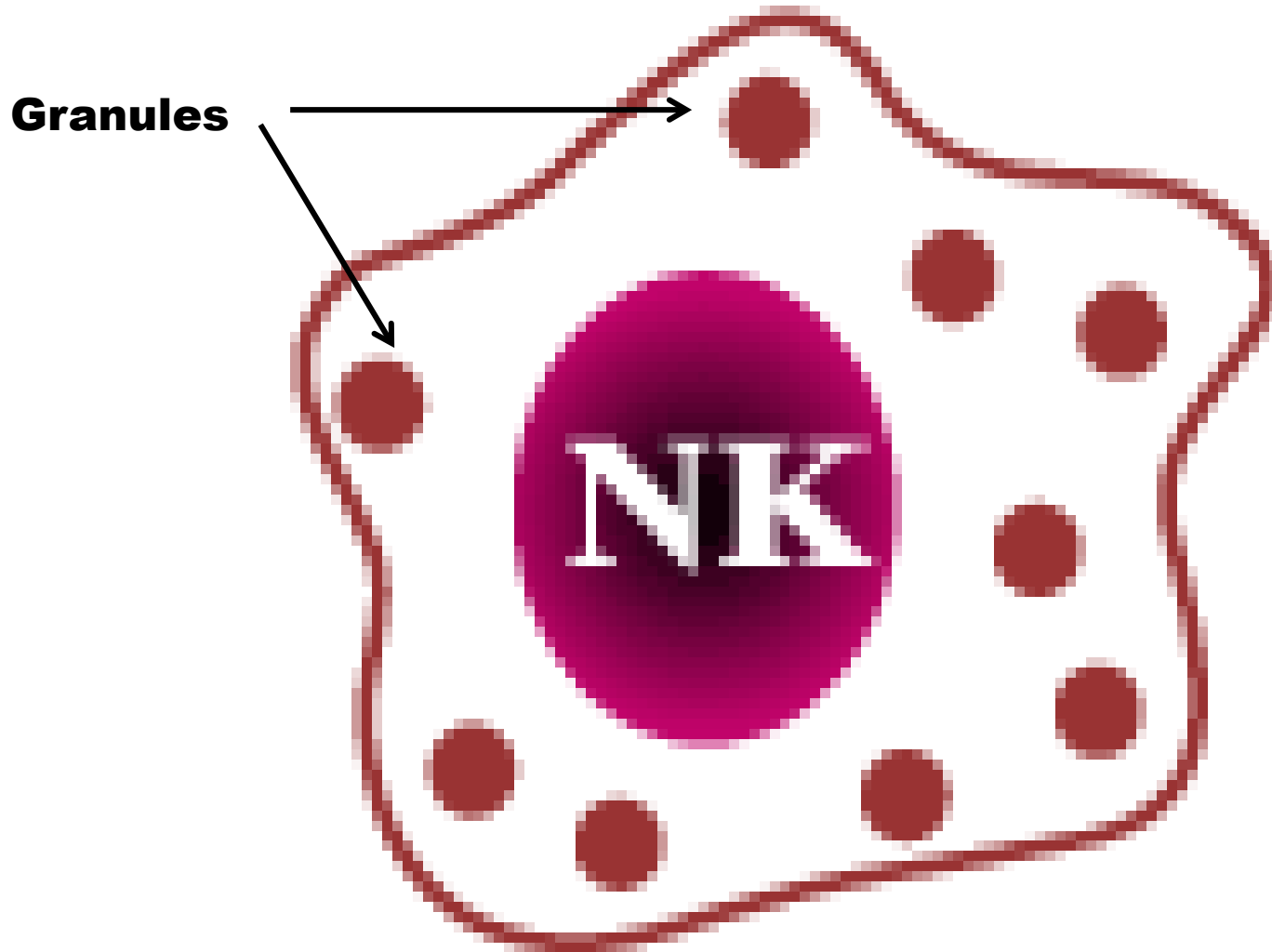
2. Immune cells



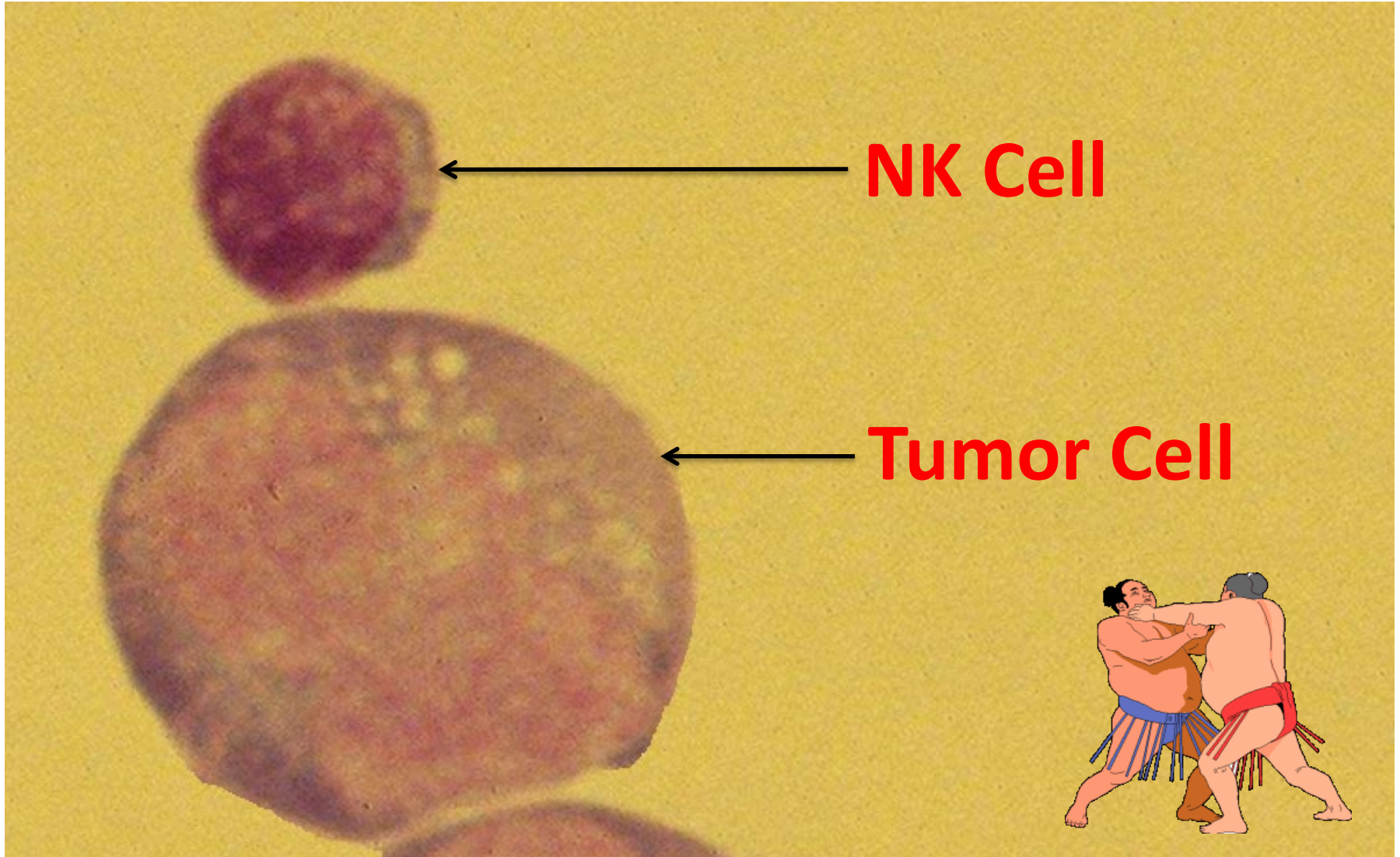
MRN-100 induces various immune cells to attack target cells



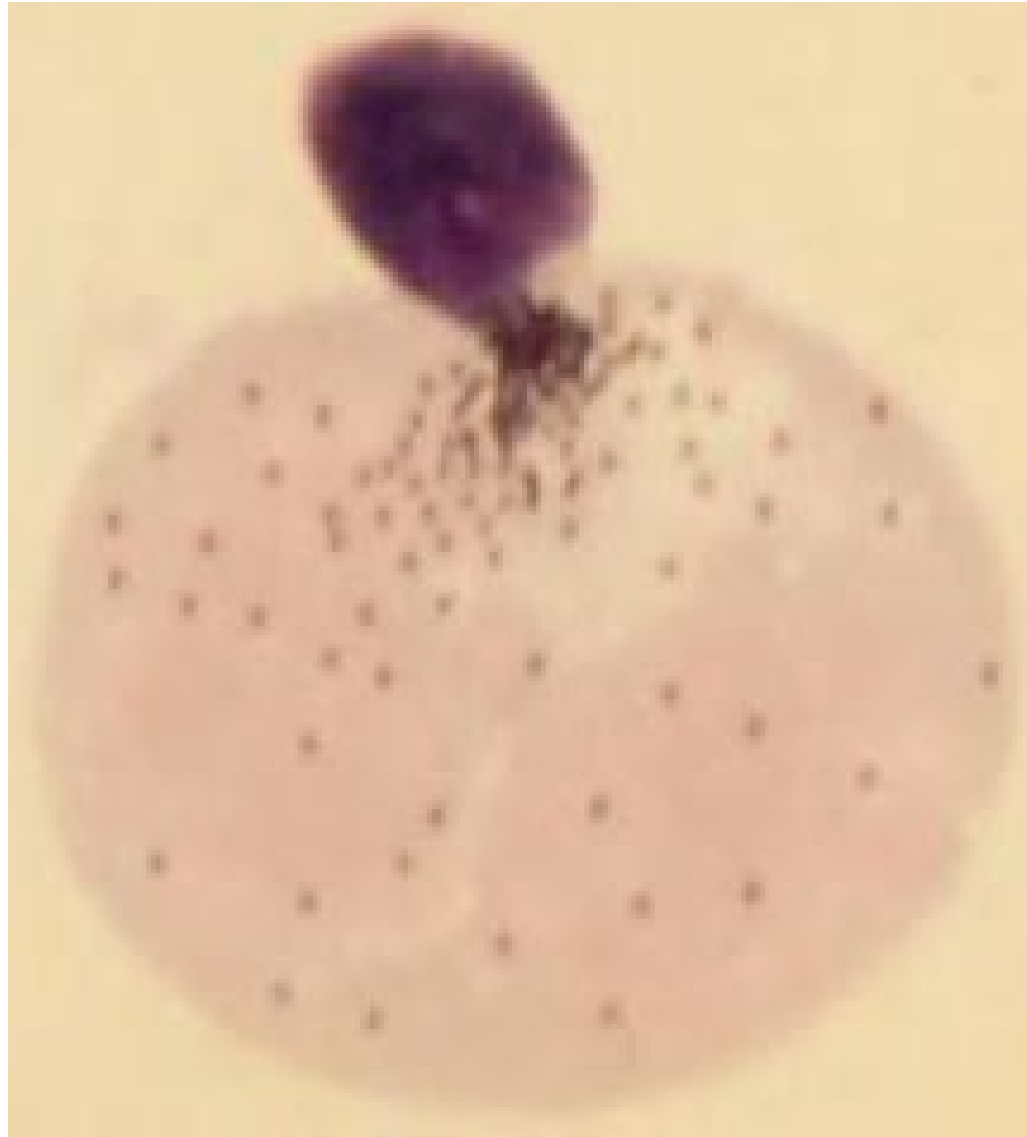
Natural Killer (NK) Cells



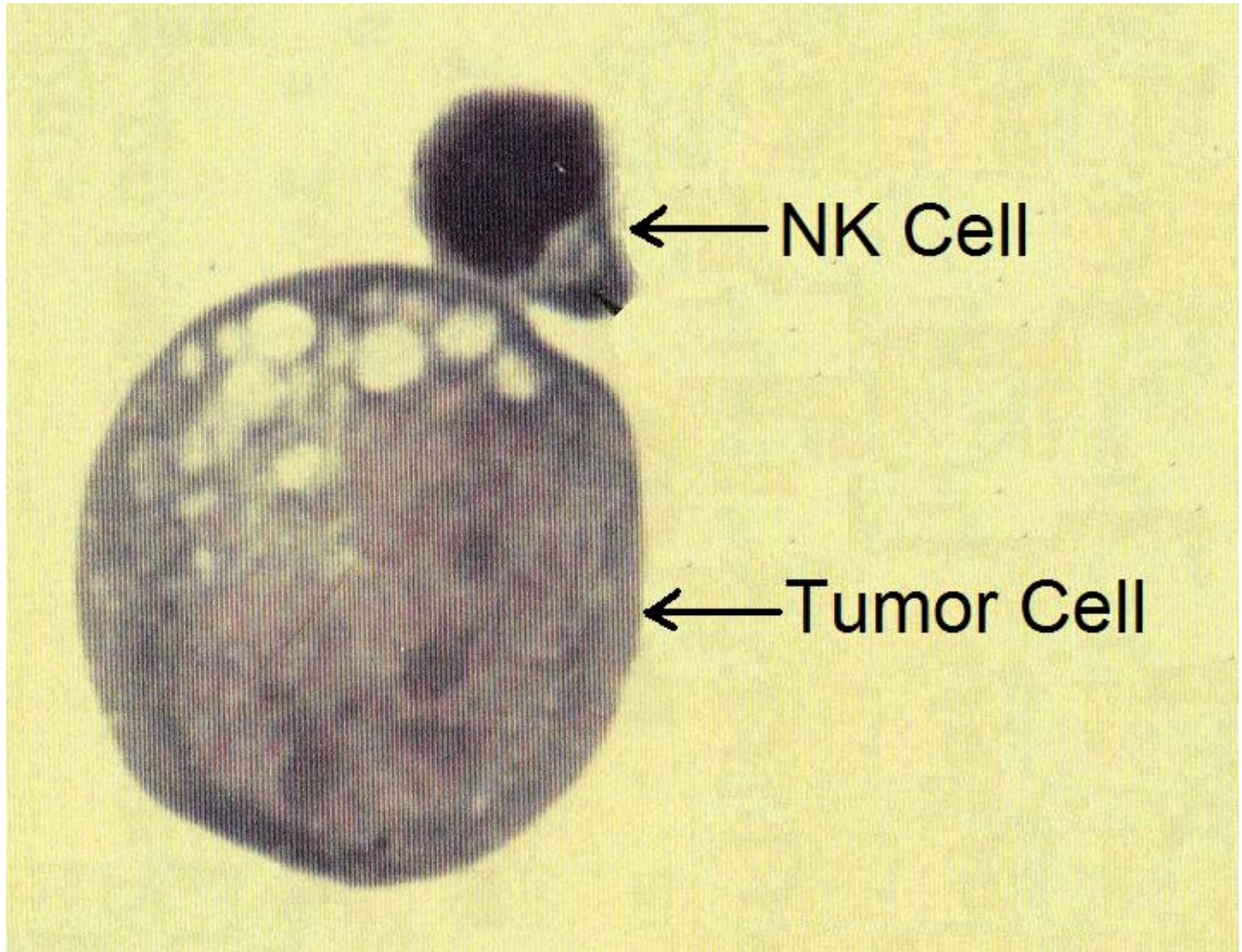
1-NK cell binds to cancer cell

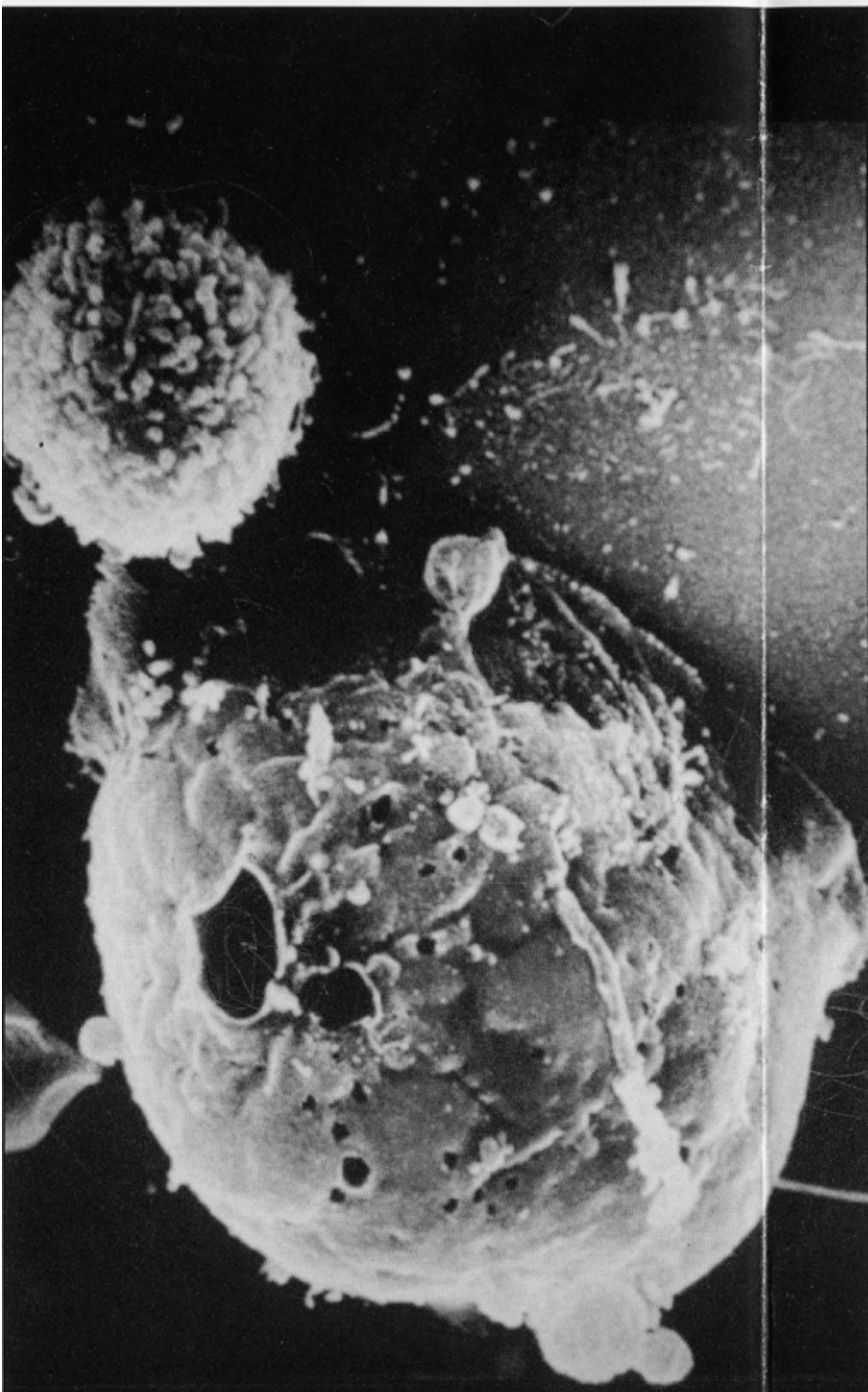


2- NK cell discharges the granules inside the cancer cell

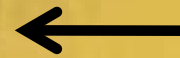
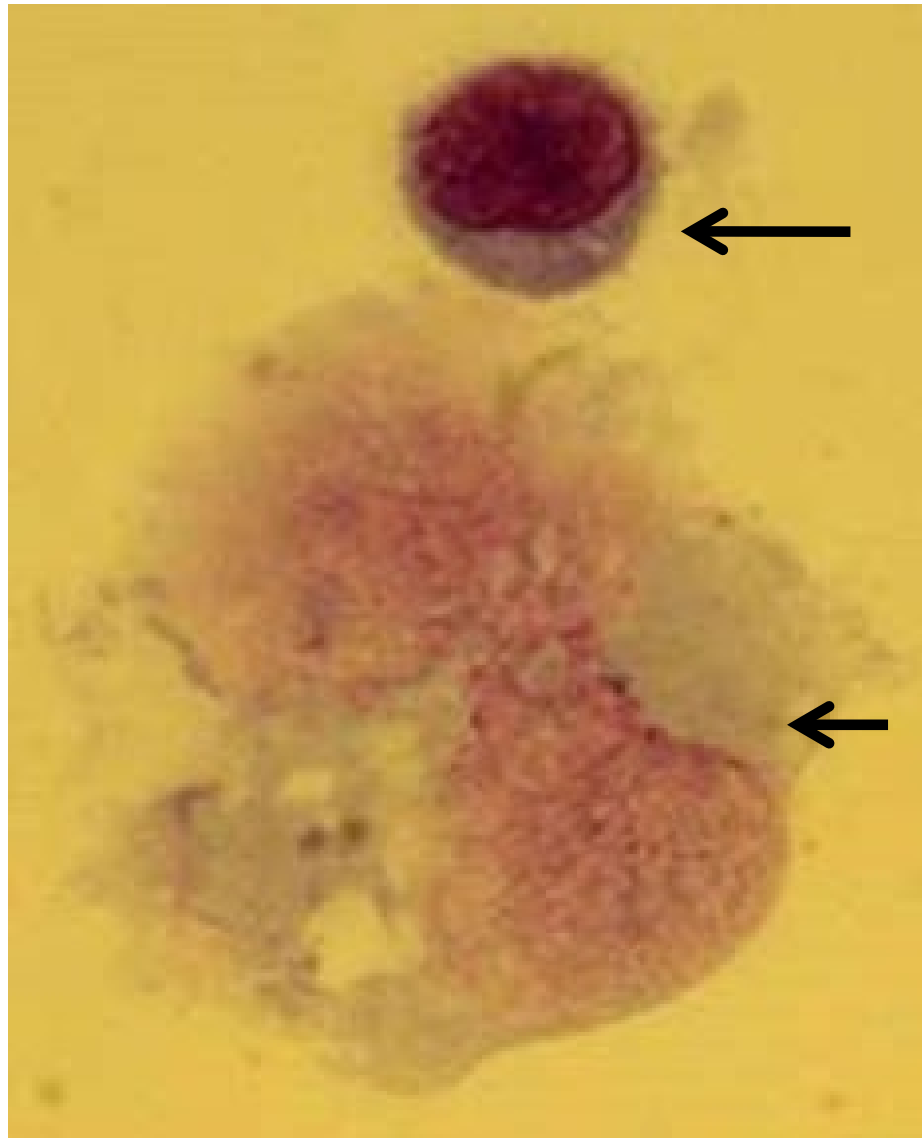


3- Granules induces holes in cancer cell





4- Cancer cell is dead

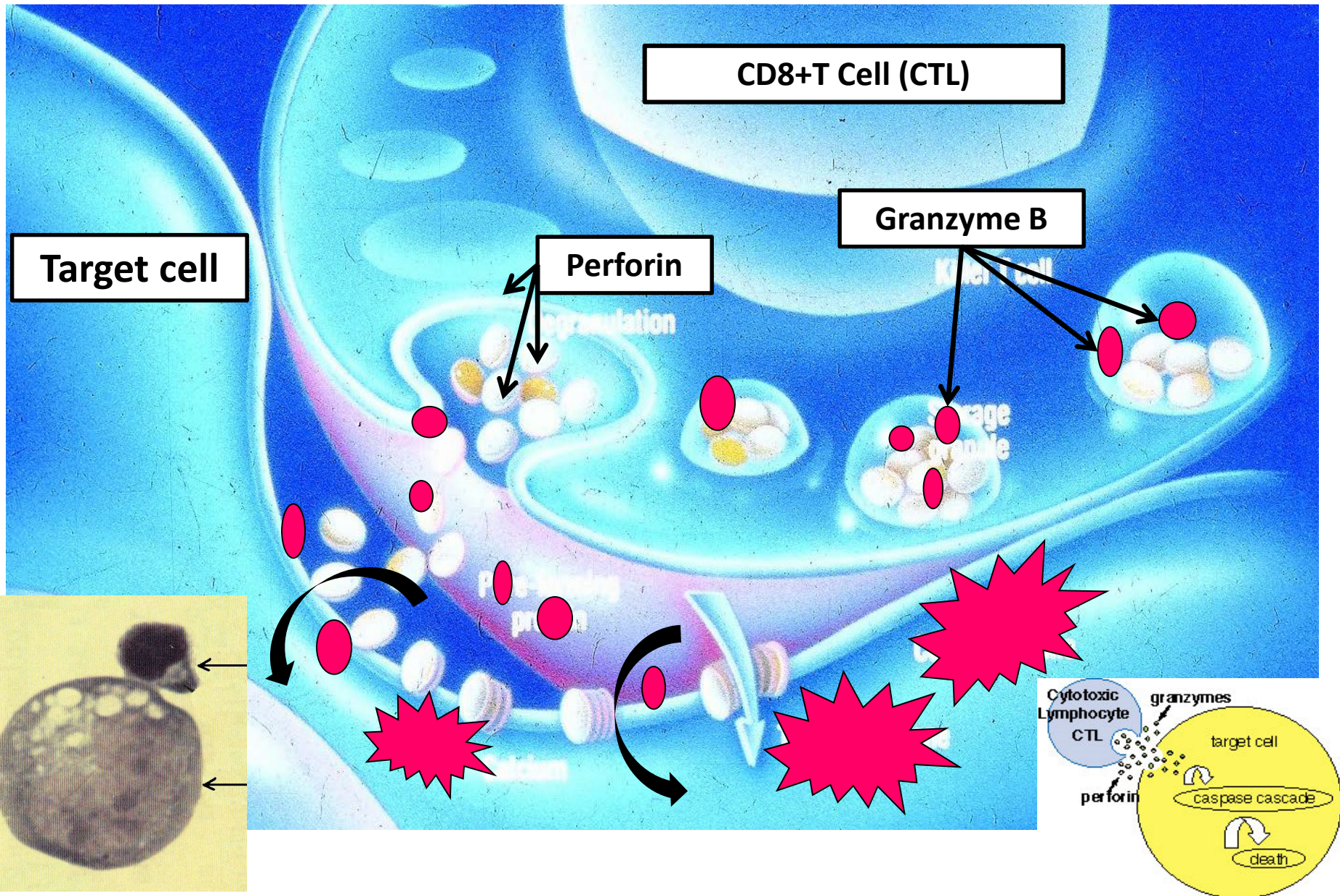


NK Cell



**Dead
Tumor Cell**

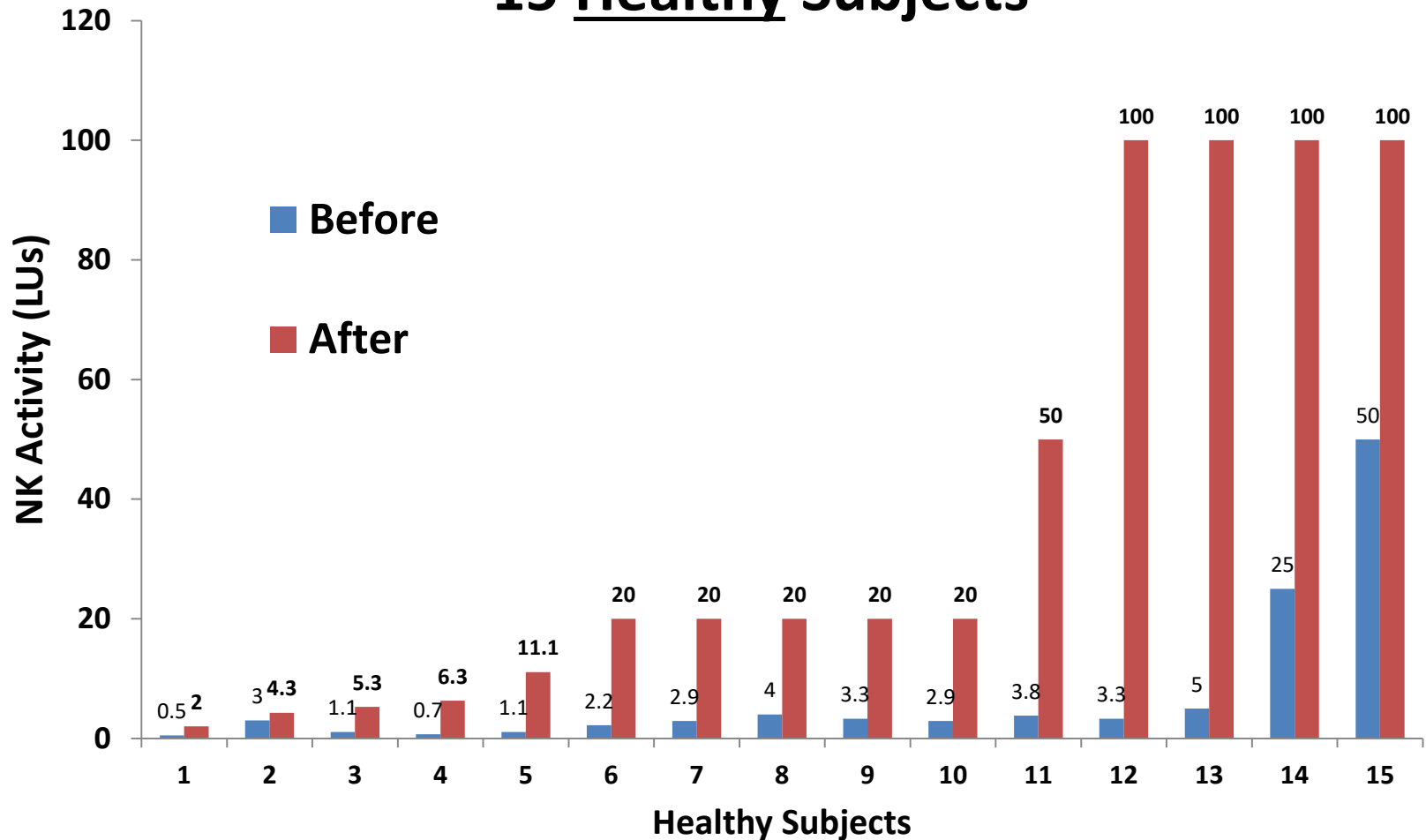
NK/CD8+T cell activity against target cells



MRN-100 Enhances Natural Killer (NK) Cell Anti-Cancer Activity

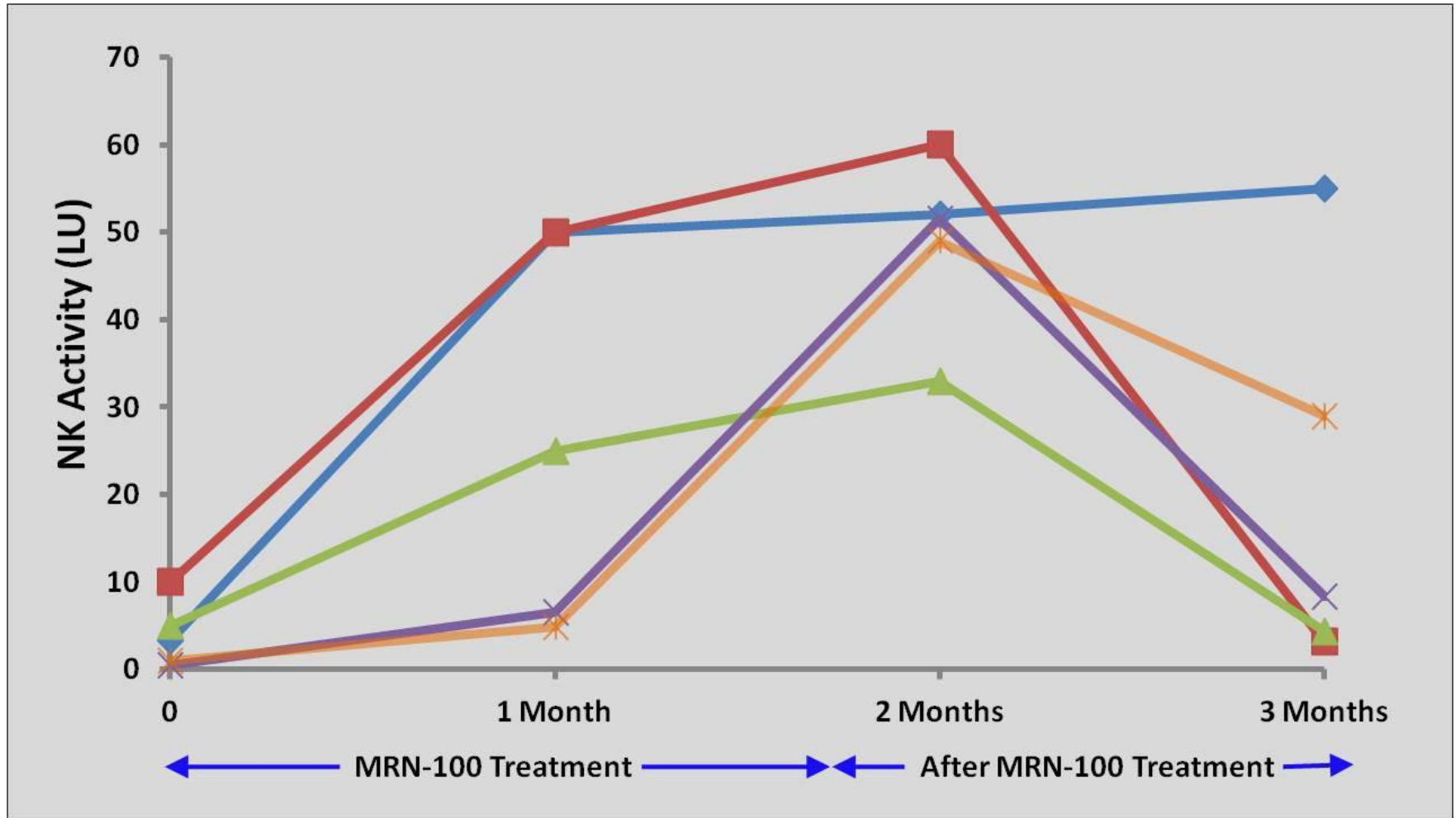
**NK Cells represent the first line of defense
against cancer.**

MRN-100 Enhances NK Cell Activity in 15 Healthy Subjects

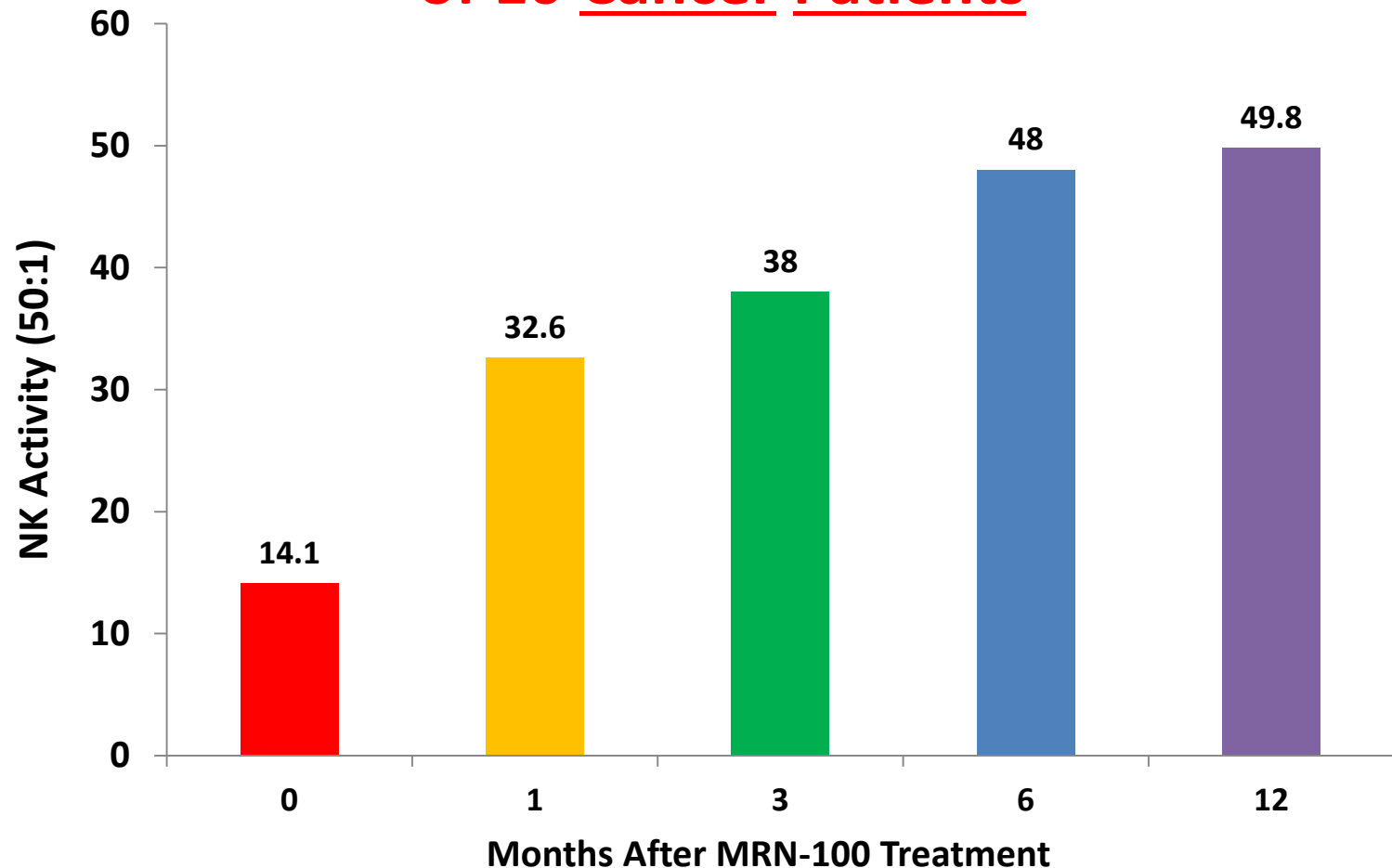


- MNC from 15 healthy subjects
- NK cytotoxicity was measured by ^{51}Cr -release assay
- Annual Conference of Clinical Immunology , New Orleans, LA, May 31-June 3, 1996

MRN-100 Enhances NK Cell Activity 5 Human healthy subjects



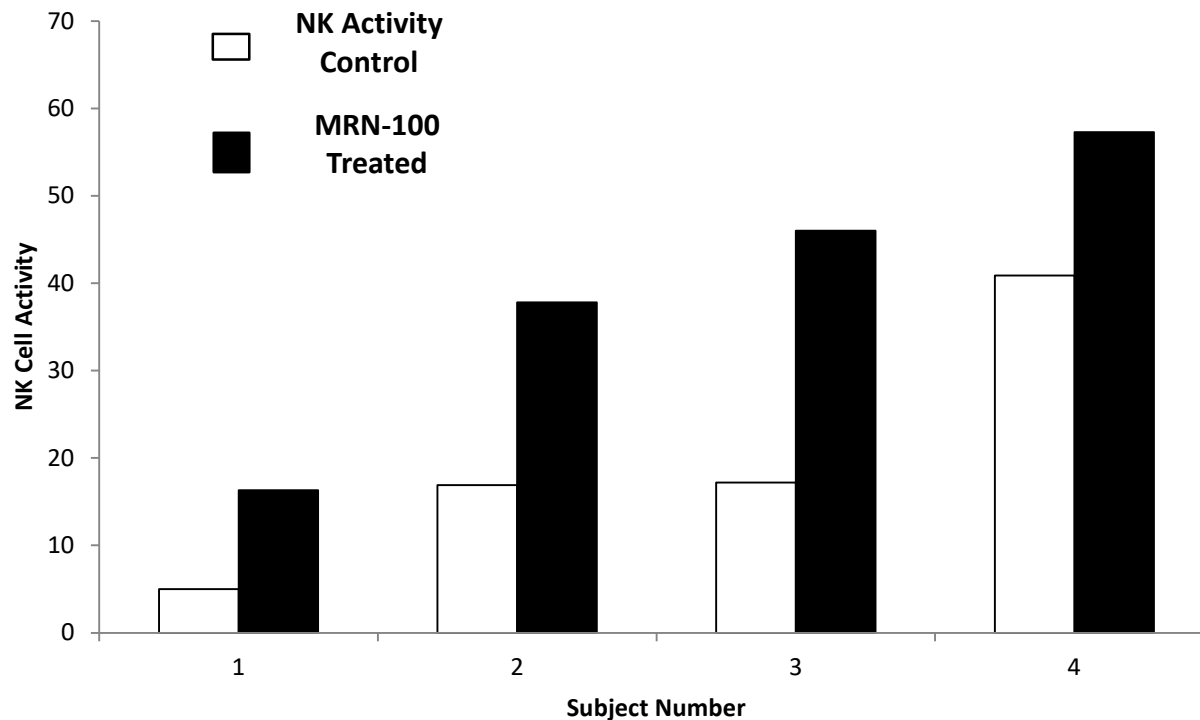
MRN-100 Enhances NK Cell Activity of 10 Cancer Patients



- MNC from 10 subjects with different malignancies
- NK cytotoxicity was measured by ^{51}Cr -release assay
- **4th International Symposium on Predictive Oncology and Therapy, Nice, France Oct 24-27, 1998.**

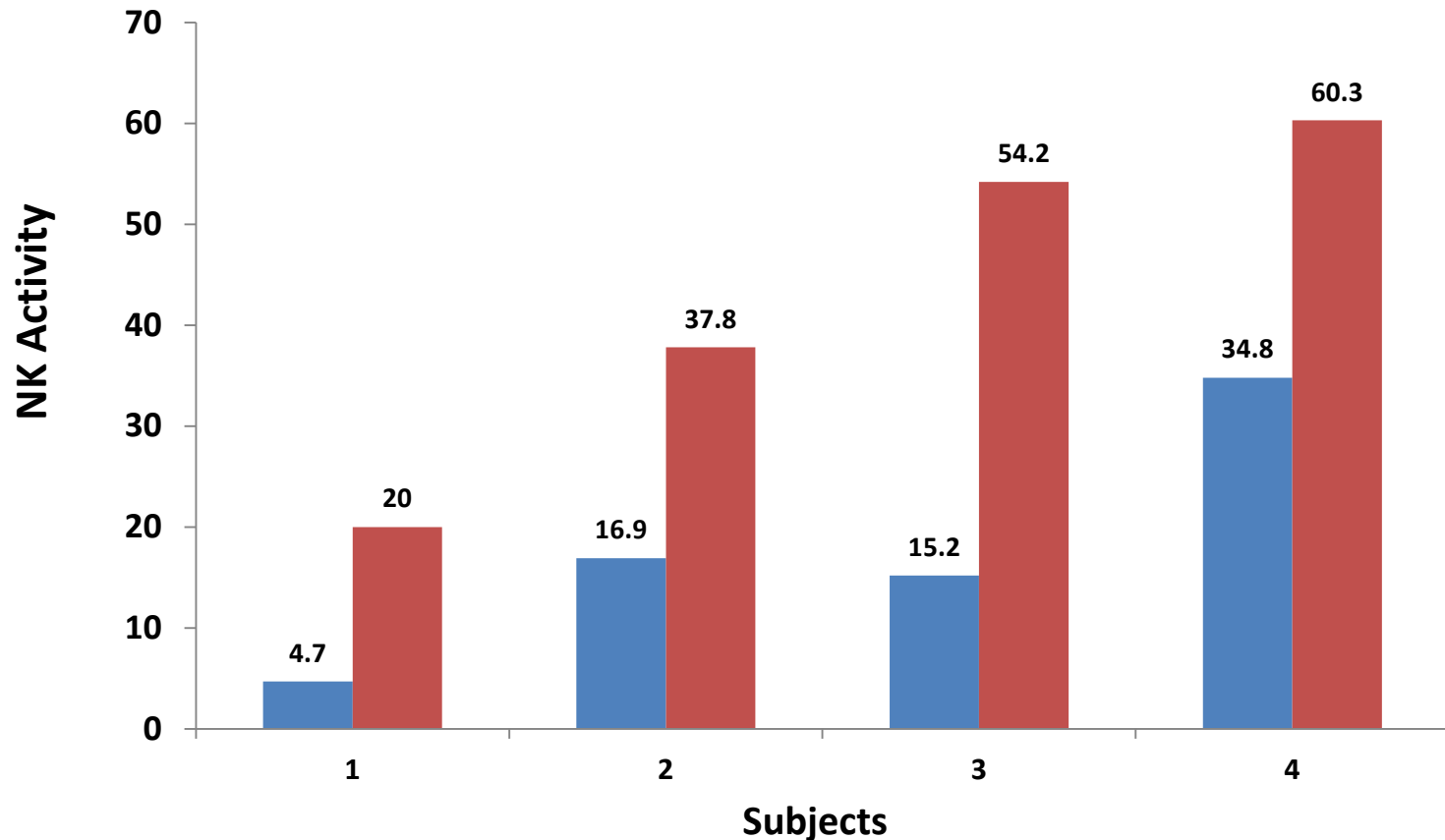
**With respect to
different types of
human
malignancies**

MRN-100 increases human head & neck carcinoma Calu-27 sensitivity to human NK cell cytotoxicity in vitro*



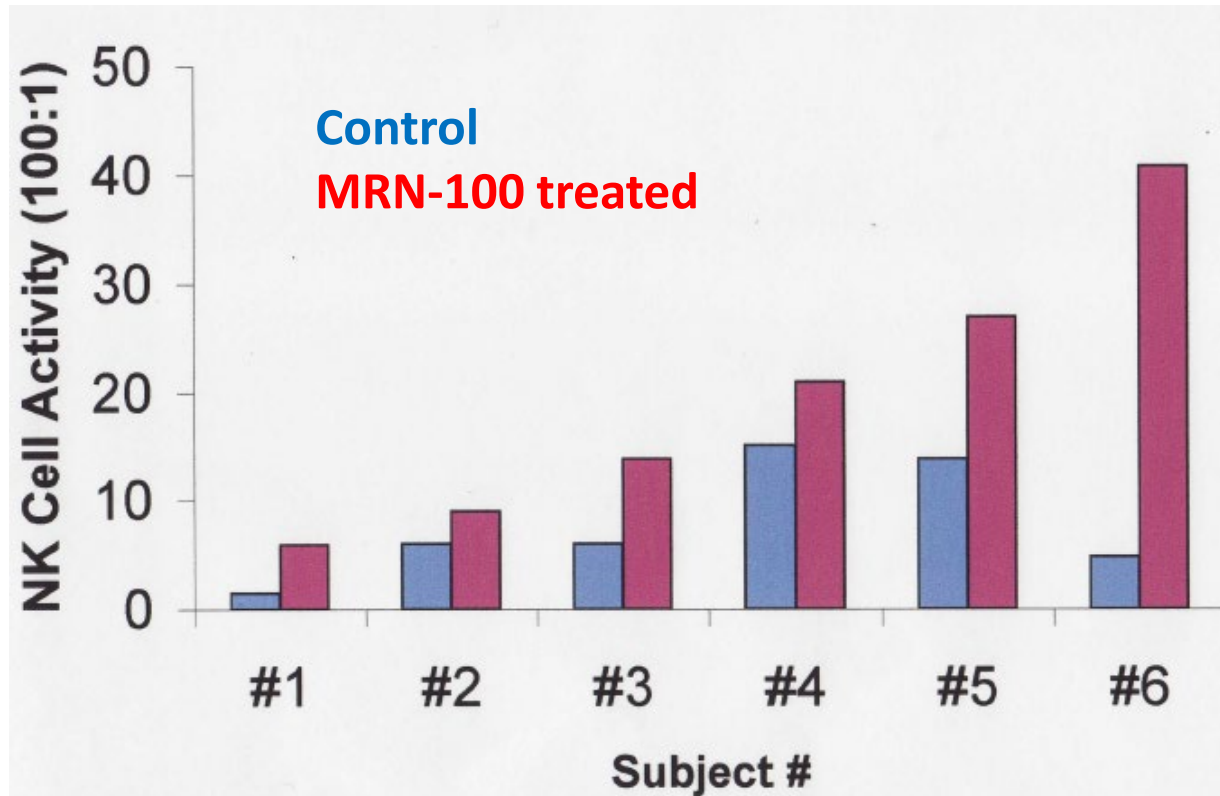
- MNC from 4 healthy subjects
- NK cytotoxicity was measured by ^{51}Cr -release assay at E:T ratio 100:1
- 4th International Symposium on Predictive Oncology and Therapy, Nice, France Oct 24-27, 1998. Cancer Detection and Prevention. Vol 22 Supp 1 1998

MRN-100 increases human erythroleukemic cell line, K562, sensitivity to human NK cell cytotoxicity in vitro



- MNC from 4 subjects with different types of malignancies
- NK cytotoxicity was measured by ^{51}Cr -release assay at E:T ratio 100:1
- **4th International Symposium on Predictive Oncology and Therapy, Nice, France Oct 24-27, 1998.**

MRN-100 increases Squamous Cell Carcinoma of the Skin (SCC) sensitivity to human NK cell cytotoxicity



MNC from 6 Healthy subjects/patients with different types of malignancies
NK cytotoxicity was measured by ^{51}Cr -release assay at E:T ratio 100:1

*Data presented at the 4th International Symposium on Predictive Oncology and Therapy. Nice, France, October 24-27, 1998.

Conclusions

- **Our study suggests MRN-100 may be an effective adjuvant for the treatment of gastric and esophageal cancer, and in other types of human malignancies.**
- **The mechanism by which MRN-100 exerts its effect may involve its ability to protect against:**
 - a. Oxidative stress by carcinogen**
 - b. Damage of immune system by carcinogen**

A scenic landscape featuring a range of blue mountains under a sky filled with soft, white clouds. The mountains are layered, creating a sense of depth and distance. The overall color palette is dominated by various shades of blue and white, giving it a calm and serene appearance.

Break

Part III

**MRN-100 and
Alzheimer's disease**

Alzheimer's Disease



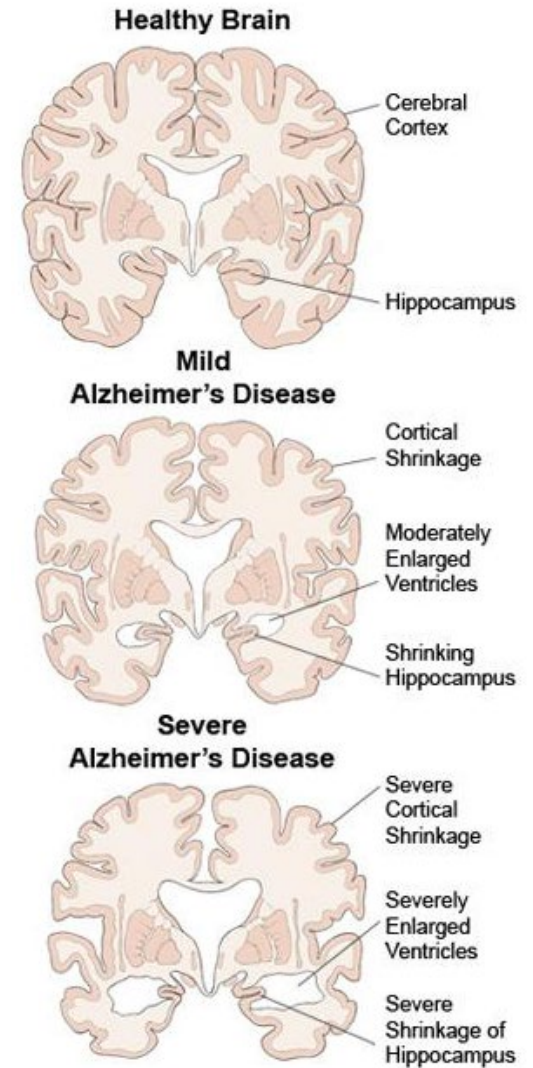
Alzheimer's disease
is the most common
cause of dementia.

Alzheimer's disease

- **Alzheimer's disease (AD)** is a neurodegenerative disorder characterized by a progressive decline of memory and cognition

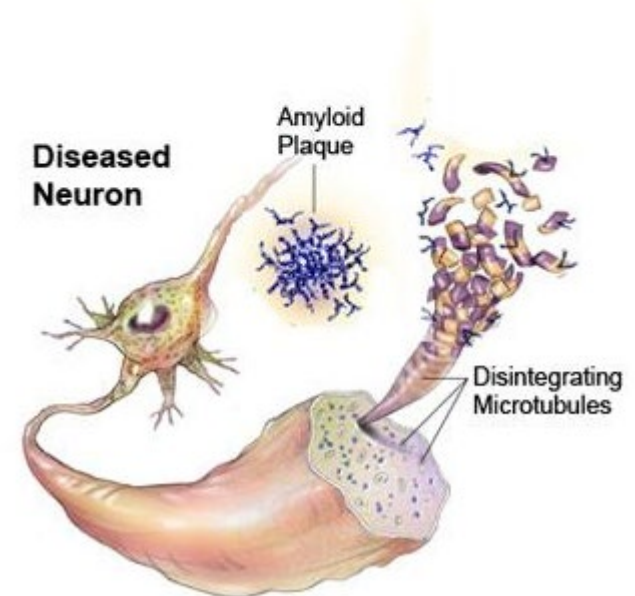
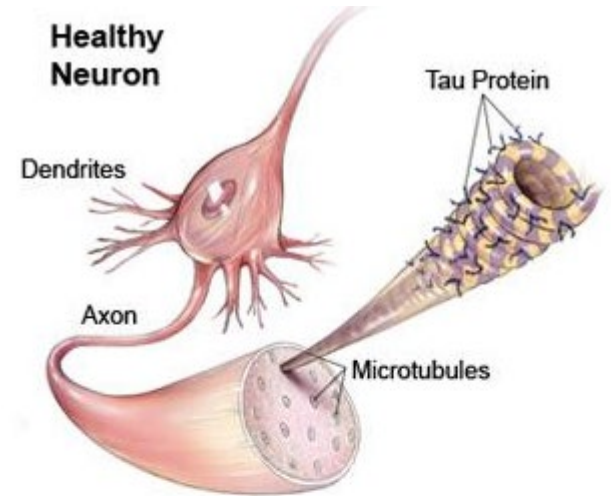
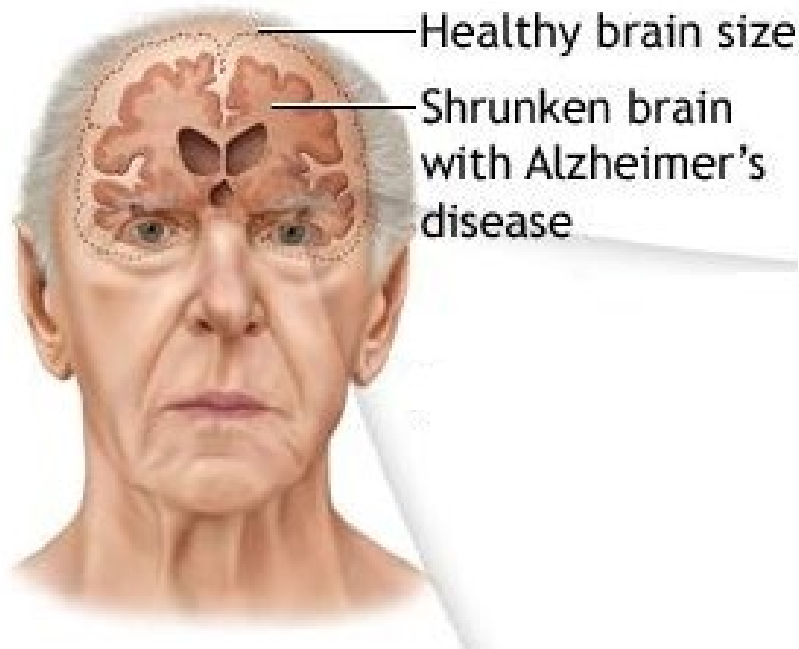
Definition

- Alzheimer's disease is a degenerative brain disease and the most common cause of dementia.
- Causes decline in memory, language, problem-solving, cognitive skills
- Areas of the brain for bodily functions also become affected
- Ultimately fatal



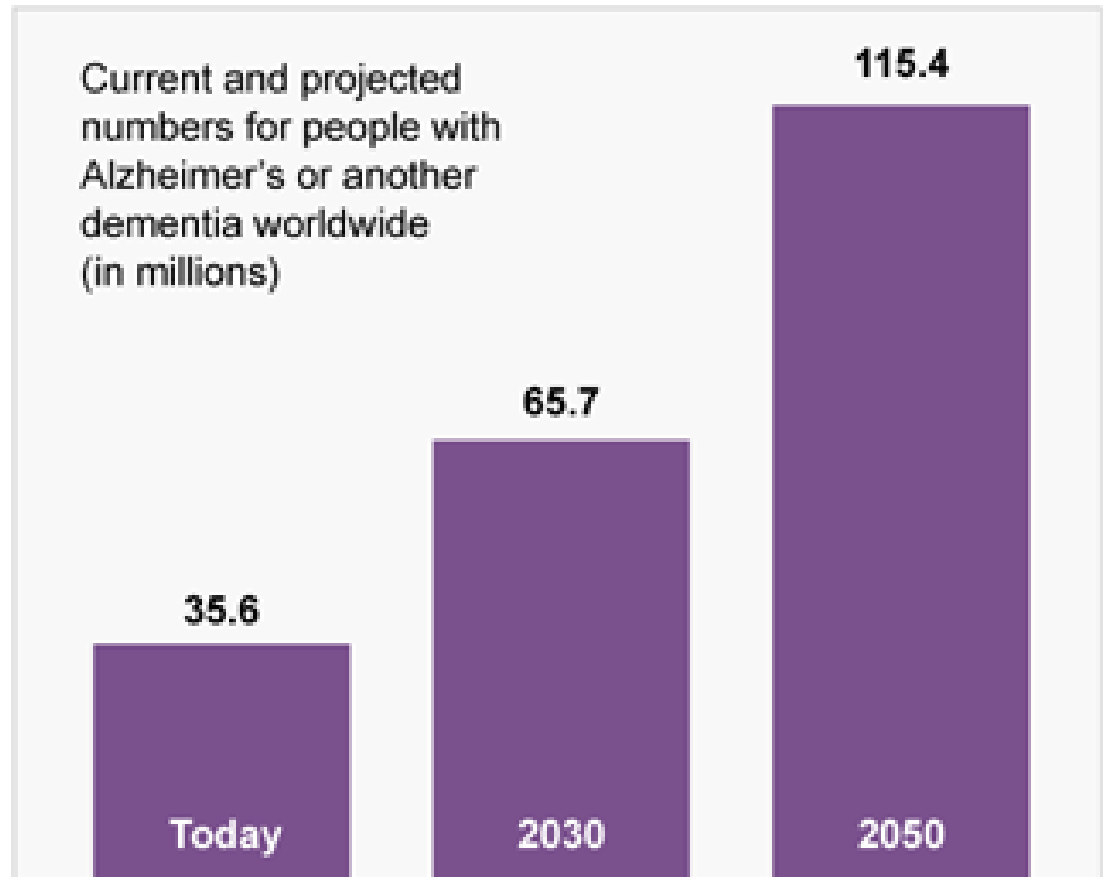
Alzheimer's Mechanism

- Nerve cells (neurons) in parts of the brain involved in cognitive function become damaged or destroyed, and the damage spreads rapidly.



Alzheimer's Statistics

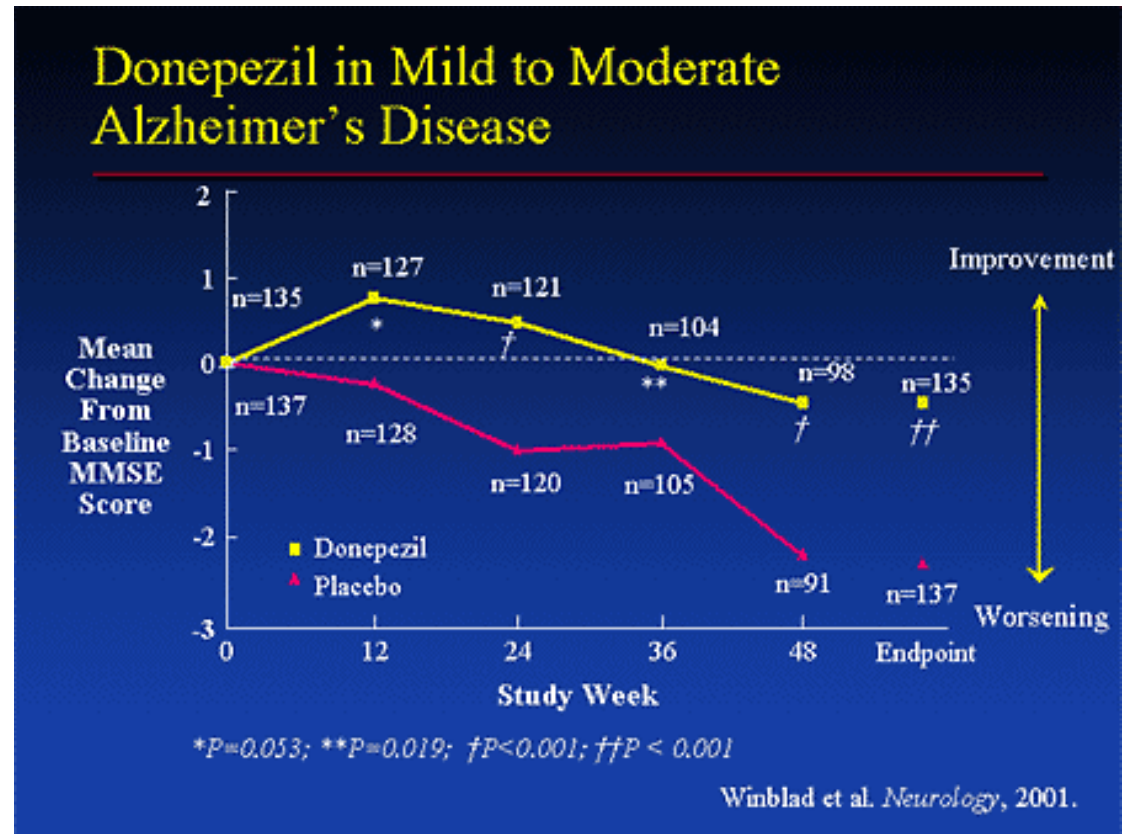
- Alzheimer's will impact more people as human longevity increases



Source: *2009 World Alzheimer Report*, from Alzheimer's Disease International (ADI), a London-based nonprofit, international federation of 71 national Alzheimer organizations including the Alzheimer's Association.

Current treatments are inadequate

- Current treatments (donepezil, known as “Aricept”) slow the progression of nerve damage, but degeneration still continues.
- Side effects of the best treatments are numerous and undesirable



- Drowsiness, malaise, loss of appetite, cramps, insomnia, tremor, nausea, diarrhea, vomiting, possible seizures, possible chest pains.

Antioxidants as new treatments for AD

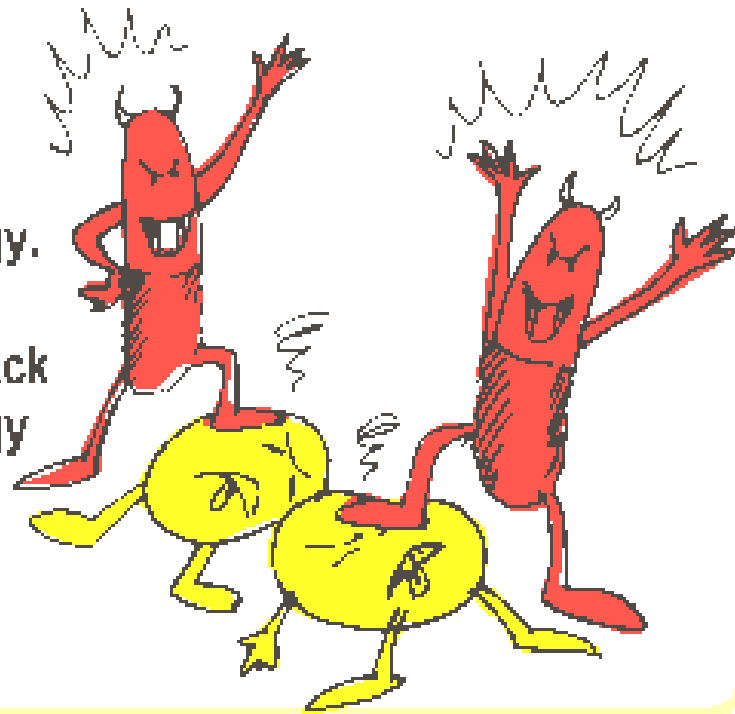
- Antioxidants are believed to play a role in preventing the development of such chronic diseases as Alzheimer's disease (AD)
 - For example, antioxidants emerged as potential AD preventive agents based upon epidemiological evidence and animal studies.*
- The imbalance between free radicals and antioxidants in neurons plays a key role in the development of AD.
 - This is called oxidative stress.
 - Oxidative stress occurs when the production of harmful molecules called **free radicals** is beyond the protective capability of the antioxidant defenses.
- Free radicals containing oxygen, known as **reactive oxygen species** (ROS), are the most biologically significant free radicals.

* Zhou et al. Am J Transl Res. 2016;8:246-69.

Free Radicals

What are Free radicals ?

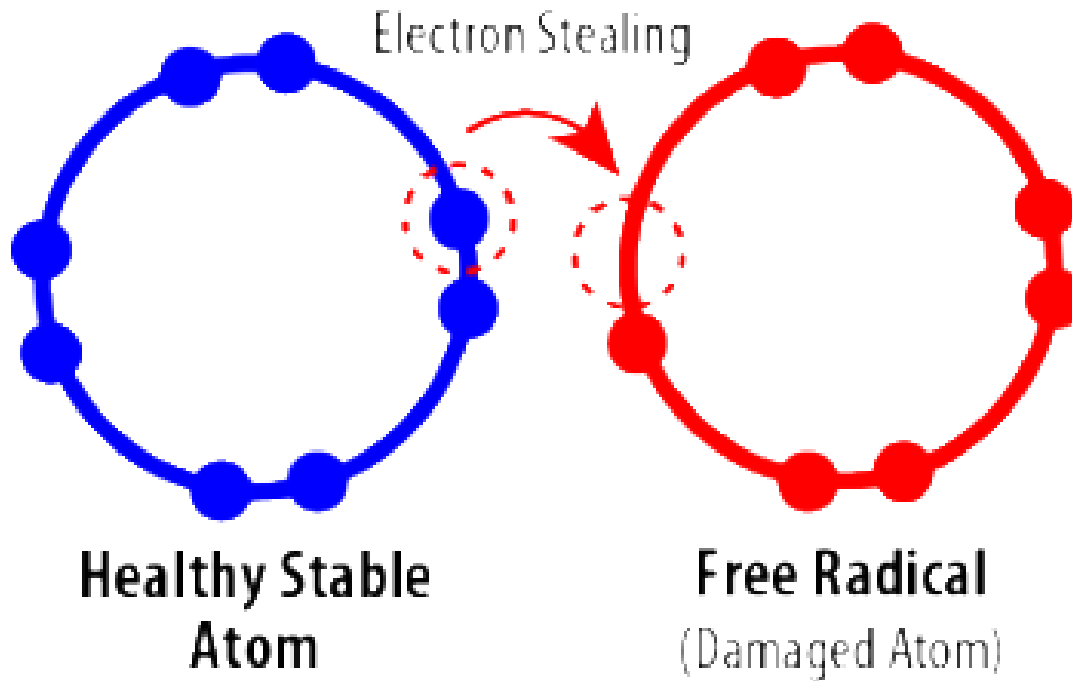
- Free radicals are like robbers which are deficient in energy.
- Free radicals attack and snatch energy from the other cells to satisfy themselves.



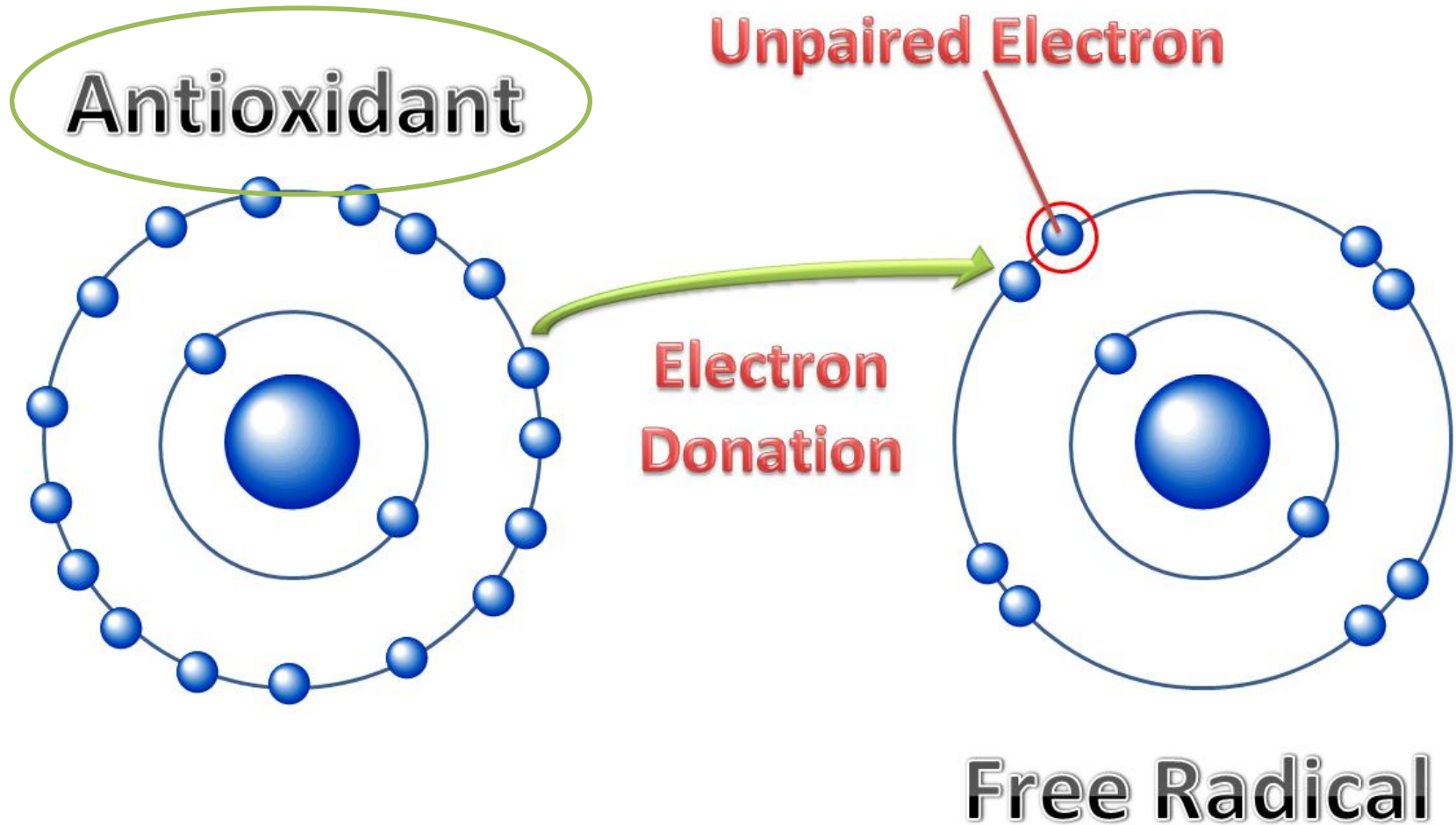
Free Radicals

-Damaging healthy, stable cells

FREE RADICAL EXAMPLE

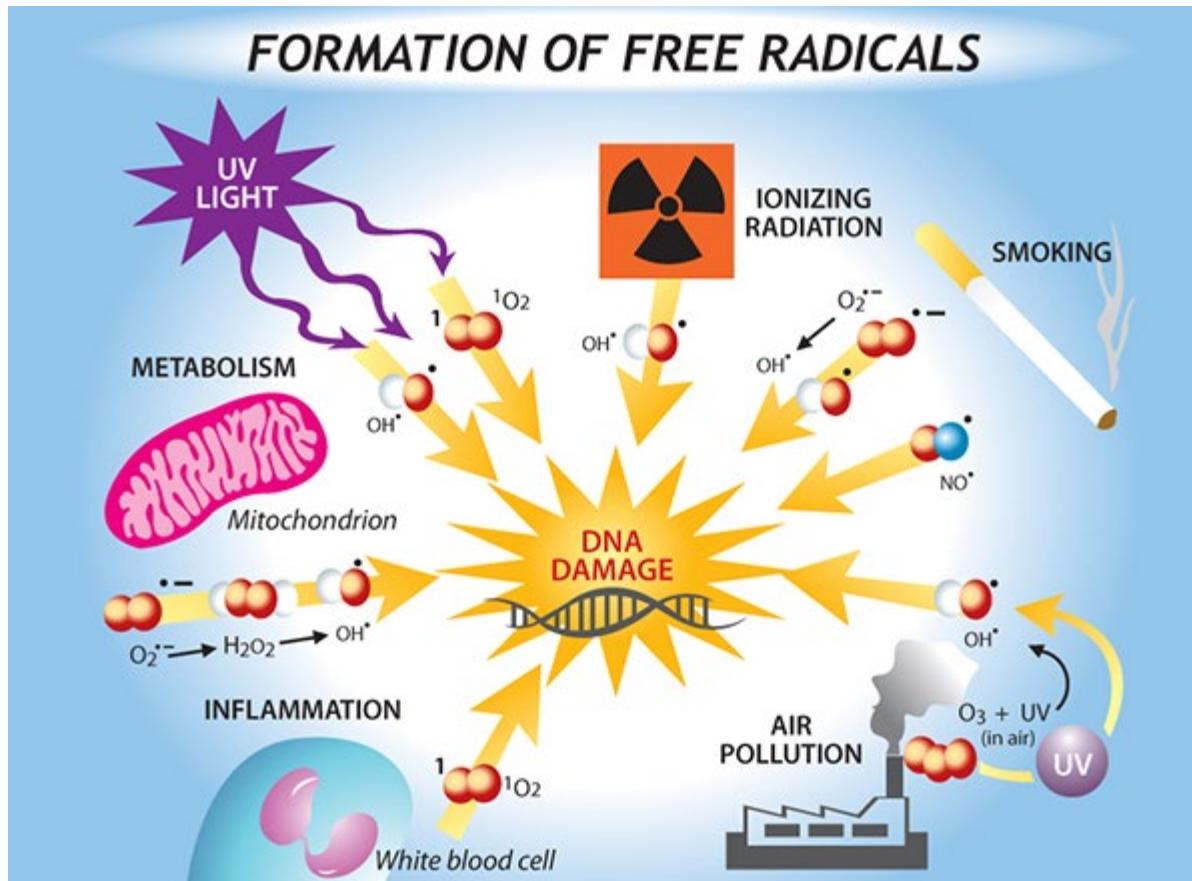


Free Radicals



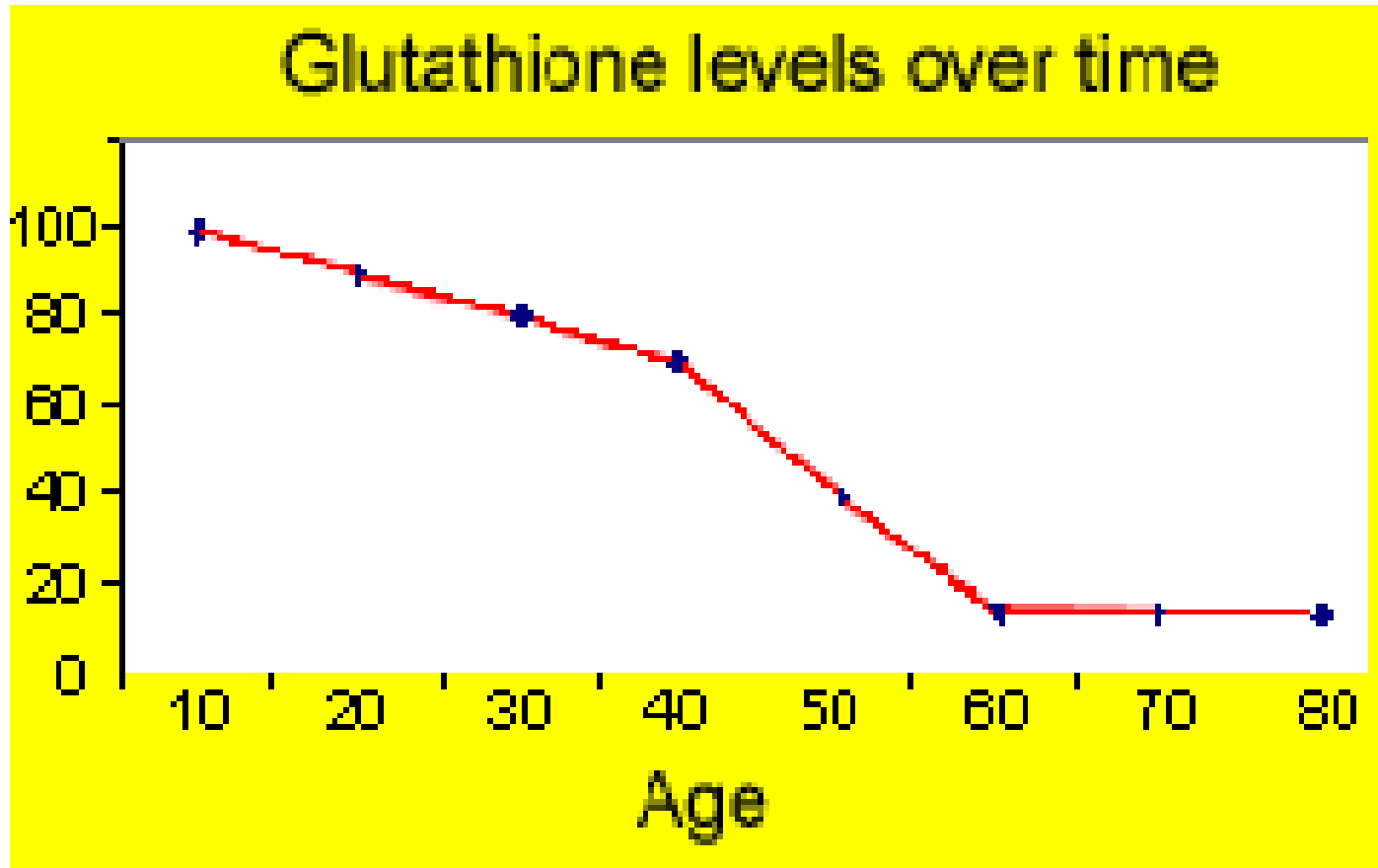
Free Radical: Environmental Factors

Free radicals can form from environmental factors such as pollution, sunlight, exhausting exercise, X-rays, smoking and alcohol.



Free Radical and Aging

Our antioxidant systems are not perfect, so as we age, cell parts damaged by oxidation accumulate.

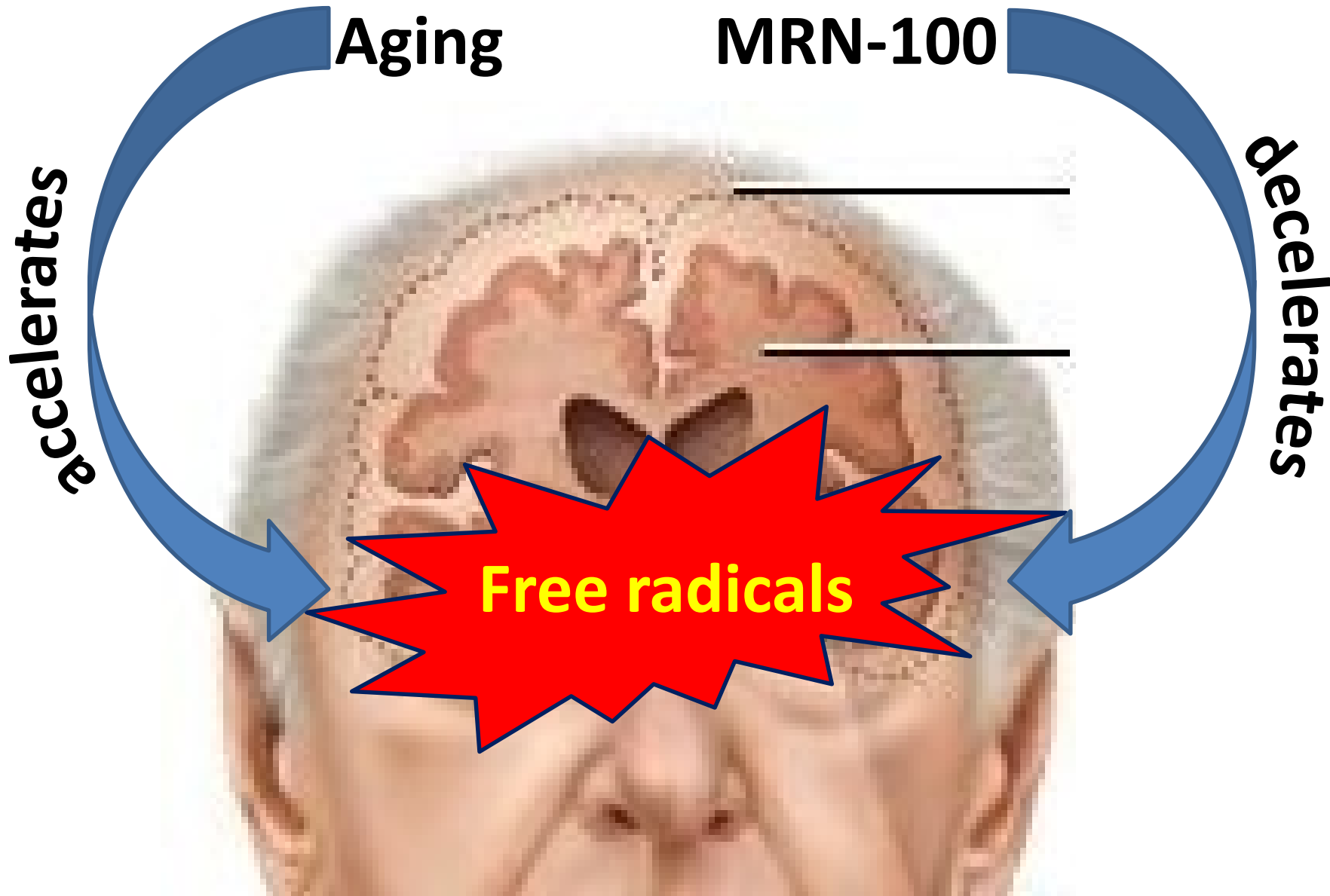


Glutathione is your body's most important detoxifying agent.

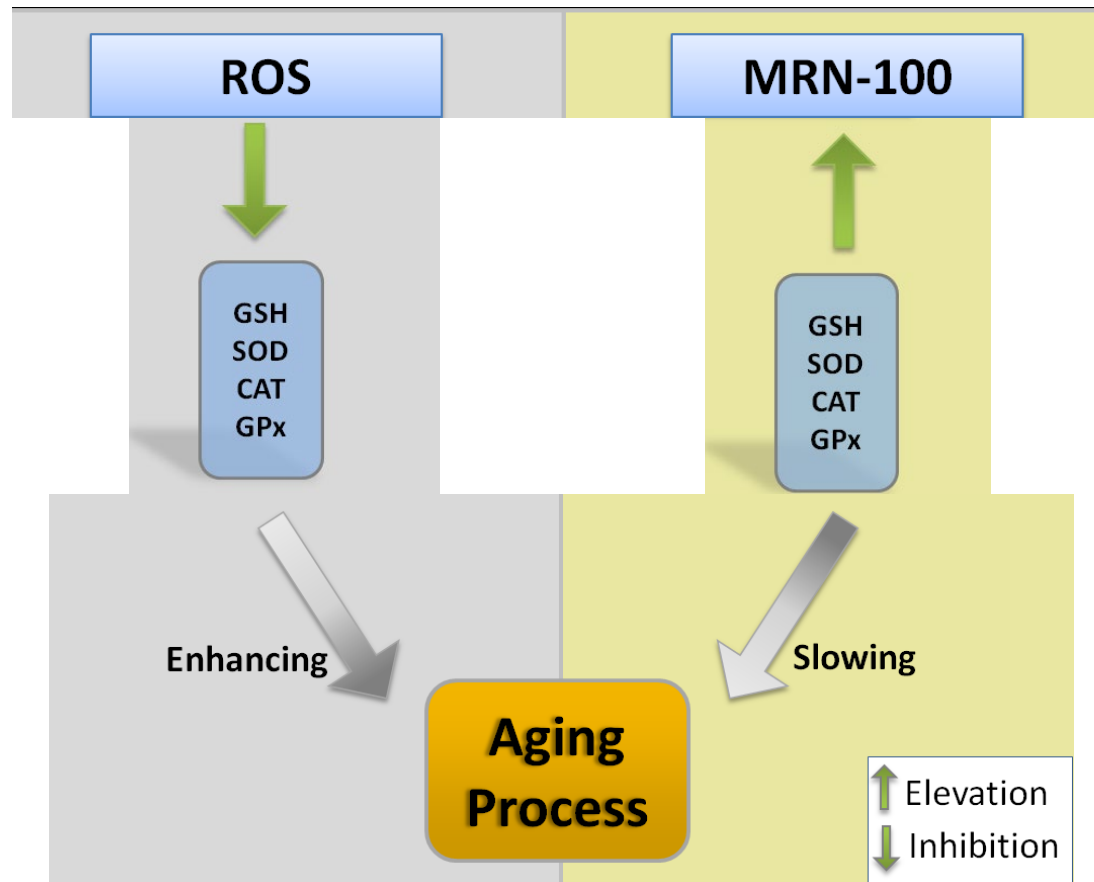
**MRN-100 is a
potent
Antioxidant
agent**

MRN-100 demonstrated its effectiveness as an antioxidant by:

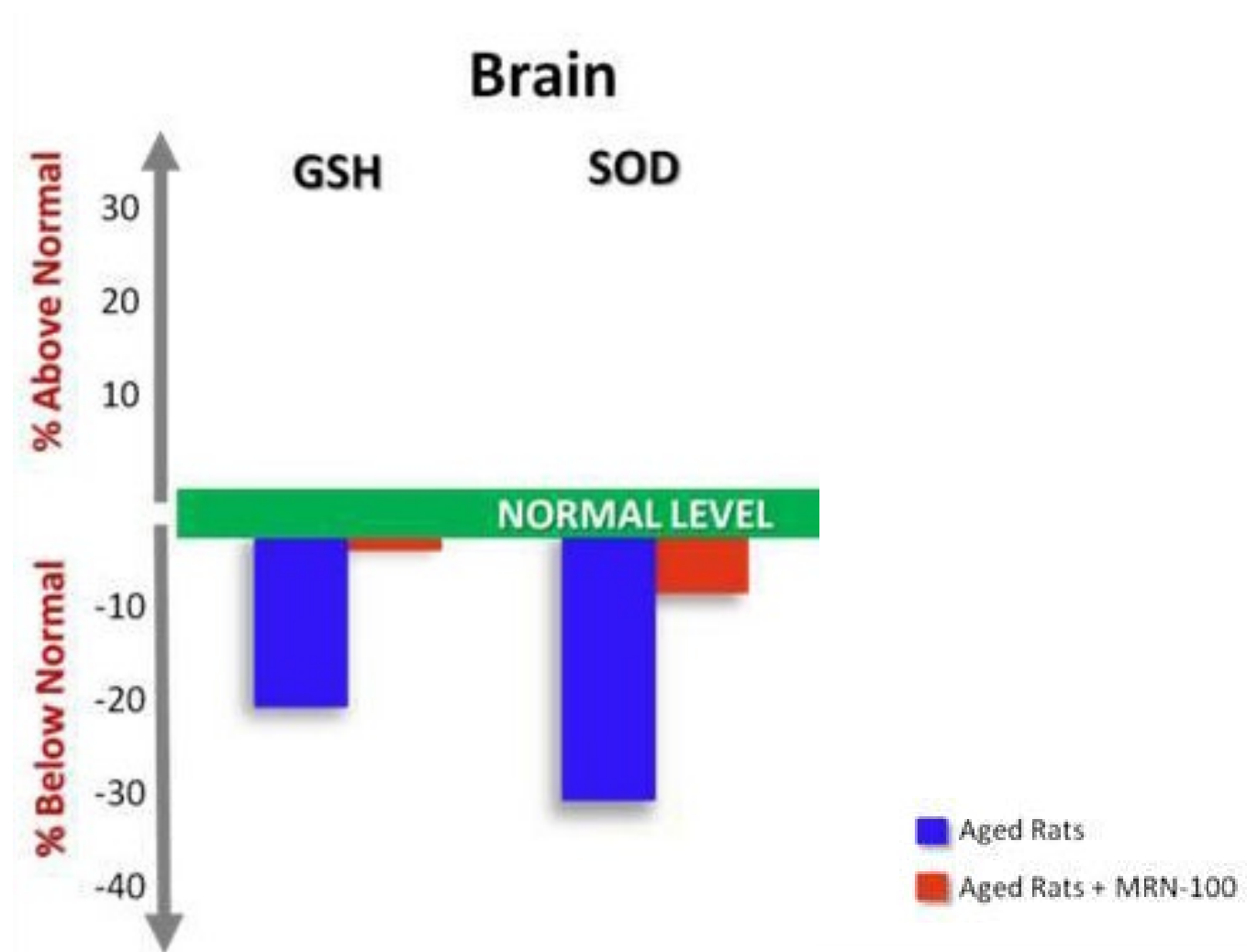
- 1. Increasing the levels of Glutathione (GSH; free radical scavenger)**
- 2. Increasing antioxidant scavenger enzymes SOD, CAT and GPx**
- 3. Prevention of Free Radicals**



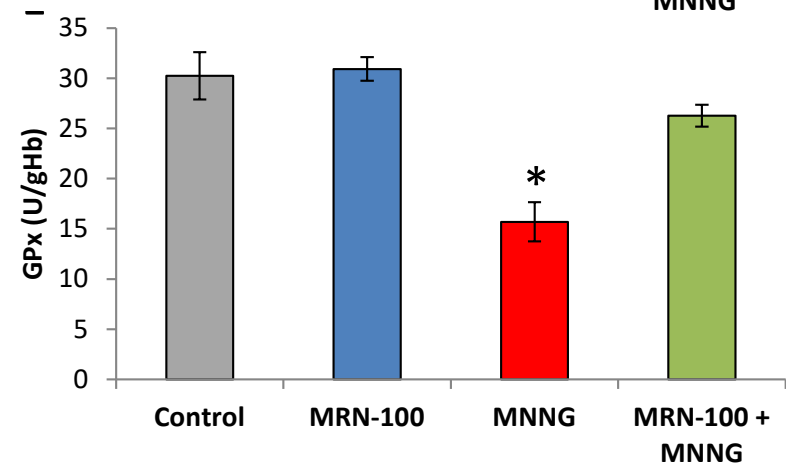
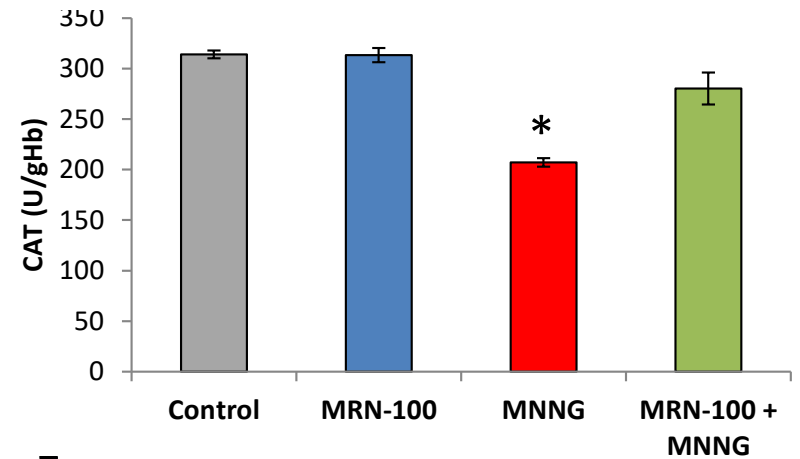
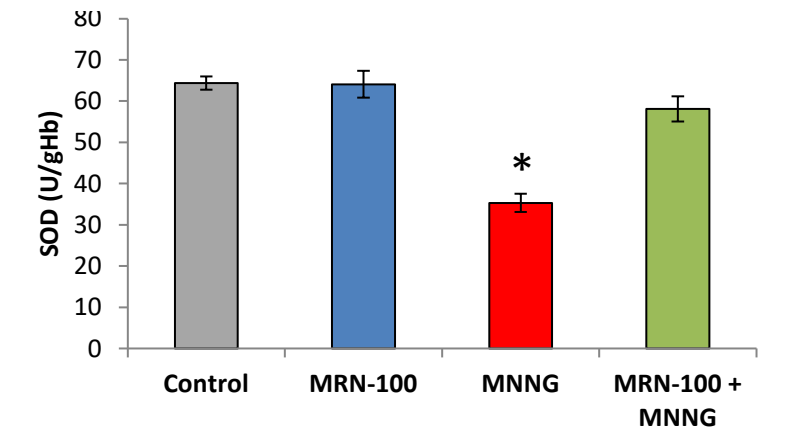
ROS enhances the aging process while MRN-100 counteracts this effect of ROS



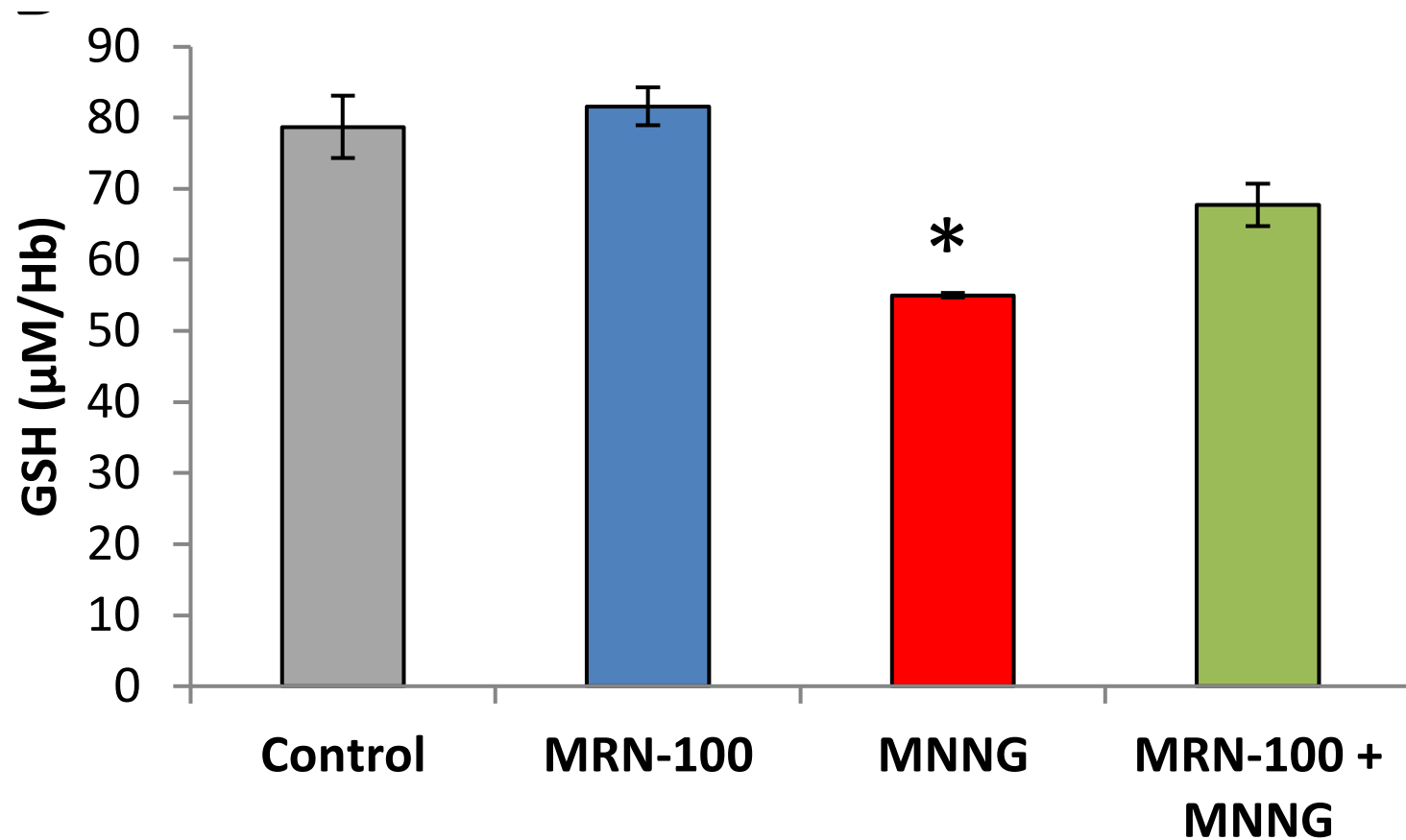
In aged rats, MRN-100 restores the levels of GSH and SOD to normal levels in the brain



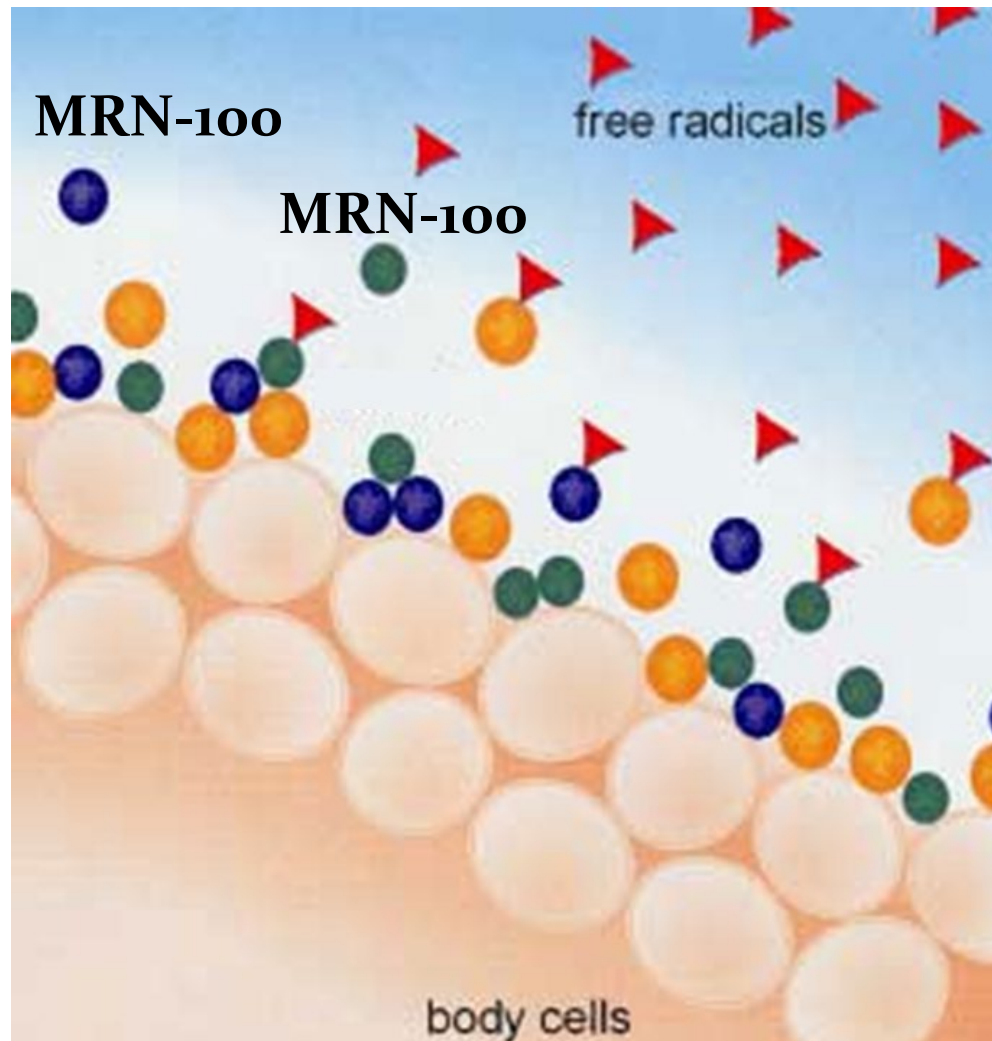
MRN-100 increases the levels of antioxidant enzymes SOD, CAT and GPx



MRN-100 increase the level of glutathione (GSH), (ROS quencher/ Free radical scavenger)



MRN-100 neutralizes free radicals and protects the cells from their damage



メディカル・サイエンス・ダイジェスト

特集

生活習慣病と ミトコンドリア異常

特集編輯 伊藤 裕
(慶應義塾大学腎臓内分泌代謝内科)

はじめに
—メタボリックドミノはミトコンドリアの病—

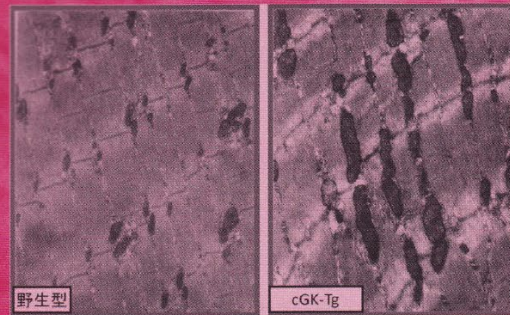
伊藤 裕
(慶應義塾大学腎臓内分泌代謝内科)

ミトコンドリアゲノムとヒトの寿命
福 典之・田中 雅嗣
(東京都健康長寿医療センター研究所)

ホルモンによるミトコンドリア制御
宮下 和季・伊藤 裕
(慶應義塾大学腎臓内分泌代謝内科)

ミトコンドリアと代謝異常
杉本 研・桑木 宏実
(大阪大学老年・腎臓内科学)

慢性腎臓病 (CKD) 発症と
ミトコンドリア酸化ストレス
佐藤 恵美子・伊藤 貞嘉 他
(東北大学病院腎高血圧内分泌科)



Digestシリーズ
—Perry症候群— 始まりは一人の患者から
坪井 義夫
(福岡大学神経内科学)

This is
Taz,
our cat

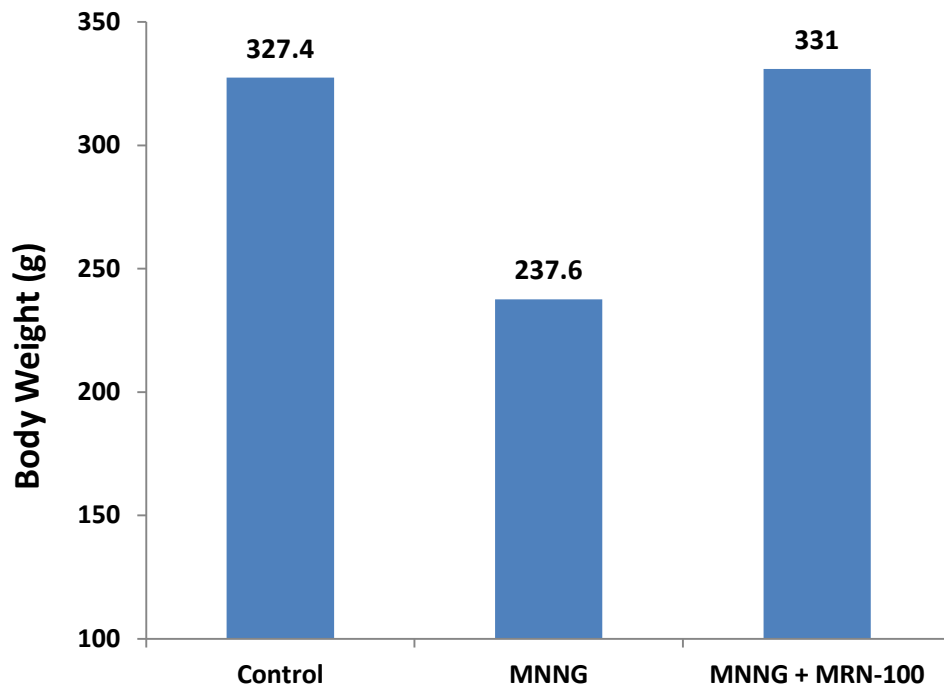


Part V



**Is MRN-100
safe?**

MRN-100 Protects Against Cancer-Induced Loss of Body Weight



MRN-100 Protects Against Cancer-Induced Loss of Body Weight

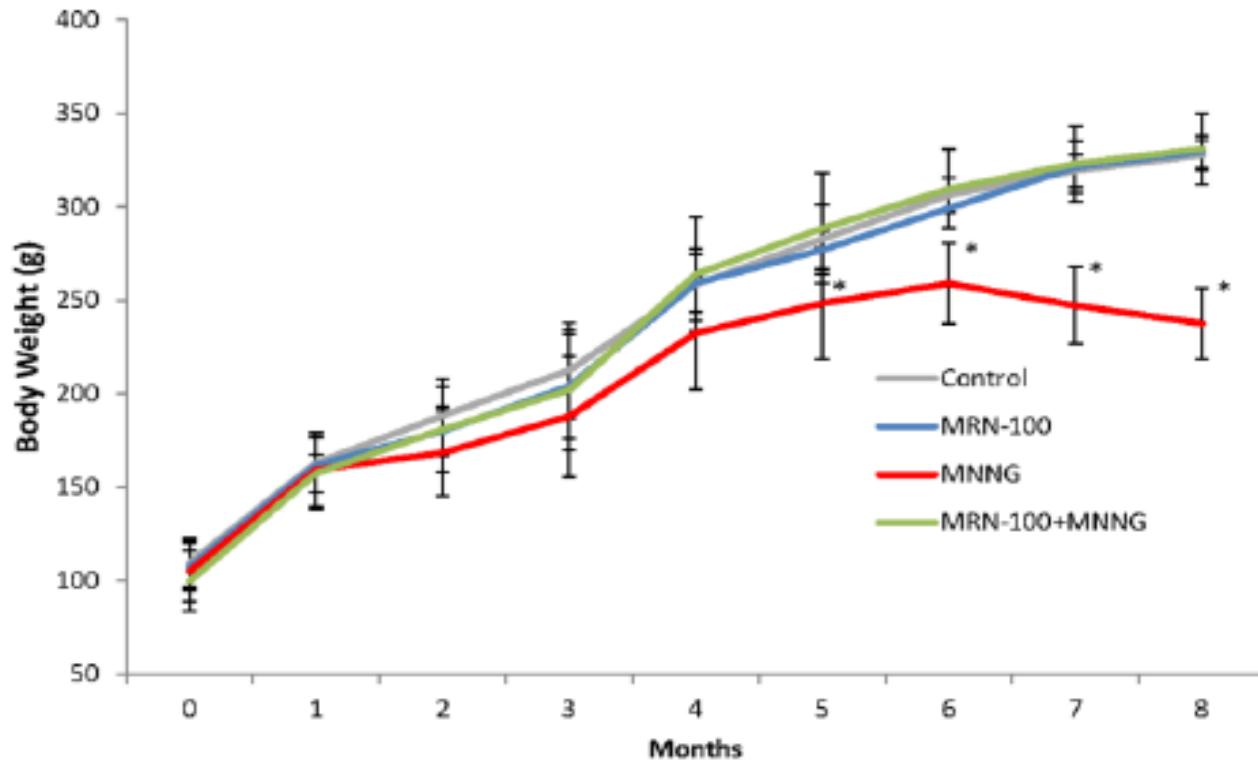


Figure 3. Changes in body weight under different treatment conditions. Rats were given carcinogen MNNG in the presence or absence of MRN-100. Animals in the 4 groups were examined for the changes in their body weight every month for 33 weeks. * $p < 0.01$ compared to control and MRN-100 plus MNNG group. Each bar represents the mean \pm SD of 10 rats/group.

MRN-100 Protects Against Cancer-Induced Loss of Organ Weight

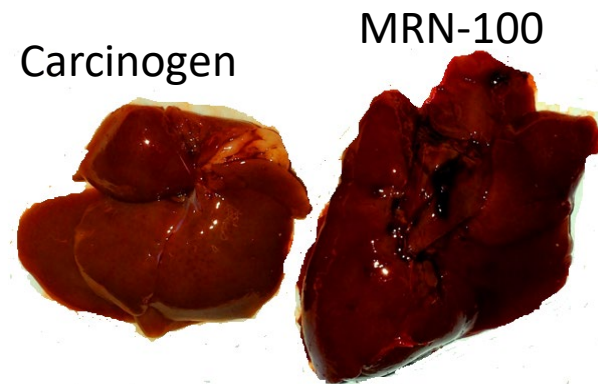
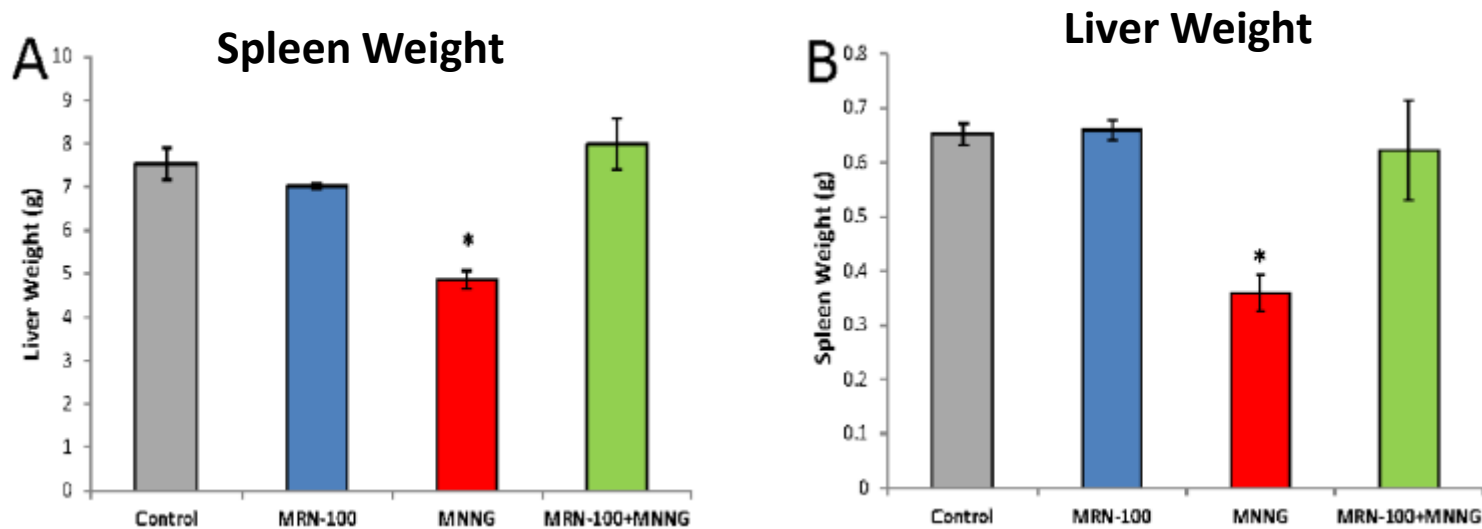


Figure 4. Changes in the liver and spleen weight. Rats were given carcinogen MNNG in the presence or absence of MRN-100 for 33 weeks and were examined for changes in the weight of livers (A) and spleens (B). * $p < 0.01$ compared to control and other groups. Each bar represents the mean \pm SE of 10 rats/group.

Conclusions



1. New data supports that Bedil Ai may be useful for enhancing eye vision.
2. MRN-100 exerts anti-cancer activity via immune modulation
3. MRN-100 may be a useful for fighting against Alzheimer's disease via its potent antioxidant effect
4. MRN-100 is a safe agent

Publications and Presentations related to MRN-100

- Ghoneum M and Kijima Y. Induction of human natural killer (NK) cell activity by p-water (MRN-100). Ann. Conf. on Clinical Immun. New Orleans, LA May 31-June 3 (1996).
- Ghoneum M, Choong K and Namatalla G. p-water (MRN-100) possesses anti-HIV activity in vitro. Palm Springs symposium on HIV/AIDS foundation of HIV therapy. Palm Springs, CA., Mar. 13-16 (1997).
- Ghoneum M, Namatalla G and Kijima Y. Phenotypic analysis of human lymphocyte sub-populations post treatment with p-water (MRN-100). Abstract, proceedings of the 88th Ann. Meeting of American Assoc. for Cancer Res. San Diego, CA., Apr 12-16 (1997).
- Ghoneum M. NK immunorestitution in cancer patients by MRN-100, an iron based compound derived from bivalent and tervalent ferrate. 4th Int. Symp. on predictive oncology and therapy. Nice, France. Oct. 24-27, 1998.
- Ghoneum M. MRN-100 depletes glutathione level and increases human head and neck carcinoma Calu-27 sensitivity to natural killer cell cytotoxicity. 4th Int. Symp. on predictive oncology and therapy. Nice, France. Oct. 24-27, 1998.
- Tachiki K, Uyemura K, Ghoneum M, Makinodan T. and Yamaguchi, D. Inhibition of tumor cell growth and modulation of cytokine production by the iron based compound MRN-100. American Association for Cancer Research (AACR) Proceedings Cytokines and Cancer: Regulation, Angiogenesis, and Clinical Applications. Vail, Colorado. September 20-24, 2000.
- Badr El-Din NK, Noaman E, Ghoneum M, and Abdel Fattah SM. An Iron-Based Beverage, Hydro-Ferrate Fluid (MRN-100), Protects Against Oxidative Stress in Aging Rats. Abstract In: Annals of Nutrition & Metabolism 55(1)2009. Presented at 19th International Congress of Nutrition. Bangkok, Thailand. October 4-9, 2009.
- Ghoneum M. Elbaghdady H, El-Shebly A and Pan D. Protective effect of HydroFerrate Fluid, MRN-100, on survival and hematopoietic cell recovery in γ -radiated Fish, *Tilapia Nilotica*. Health Physics Society (HPS) 57th Annual Meeting (American Conference of Radiological Safety). 22-26 July, 2012 in Sacramento, CA.
- Ghoneum M, Matsuura M and Gollapudi S. An iron-based beverage, hydro ferrate fluid, MRN-100, alleviates oxidative stress in murine lymphocytes *in vitro*. Nutrition J. 8(1); 18 (2009).
- Badr El-Din NK, Noaman E, EL-Banna SM, and Ghoneum M. Reversal of age-associated oxidative stress in rats by MRN-100, a hydro-ferrate fluid. In Vivo. 24:525-34 (2010).
- Ghoneum M and Shaheen M. MRN-100, an iron-based compound possesses anti-HIV activity *in vitro*. Evid Based Complement Alternat Med. 7(4): 427–432 (2010).
- Ghoneum M, Elbaghdady H, El-Shebly A and Pan D. Protective effect of HydroFerrate Fluid, MRN-100, on survival and hematopoietic cell recovery in γ -radiated Fish, *Tilapia Nilotica*. J Rad Res.(submitted, 2012).
- Ghoneum M and Badr El-Din N, Mitochondria and Modulating Oxidative Stress: A Role for HydroFerrate Fluid (MRN-100) in Reversing Age-associated Oxidative Stress and Apoptosis. (Review article in Japanese) Medical Science Digest (MSD) Vol. 38, 2 (2012).
- Ghoneum M, Elbaghdady HA, El-Shebly AA, Pan D, Assanah E, Lawson G. Protective effect of hydroferrate fluid, MRN-100, against lethality and hematopoietic tissue damage in γ -radiated Nile tilapia, *Oreochromis niloticus*. J Radiat Res. 54(5):852-62 (2013).
- Ghoneum M, Badr El-Din NK, Abdel Fattah SM, Pan D and Tolentino L. Hydroferrate fluid, MRN-100, provides protection against chemical-induced gastric and esophageal cancer in Wistar rats. Int J Biol Sci.11 (3)295-303 (2015).

Acknowledgements



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- Lina Wang, MD. USC, USA
- Motohiro Matsuura, Ph.D. Jichi Medical University, Japan





**Linus Pauling, 2 time Nobel Prize Winner,
Vitamin C advocate**





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SULLIVAN COUNTY

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House of Representatives
State of Tennessee

NASHVILLE

MEMBER OF COMMITTEES
CHILDREN AND FAMILY AFFAIRS
FINANCE, WAYS AND MEANS
TRANSPORTATION

SUBCOMMITTEES
DOMESTIC RELATIONS
PUBLIC TRANSPORTATION AND HIGHWAYS

April 22, 2004

Dr. Mamdooh Ghoneum Ph.D
3240 Kelton Ave,
Los Angeles, CA 90034

Dear Dr. Ghoneum:

On behalf of the State of Tennessee, we would like to extend our appreciation for your participation in the Alternative Medicine Seminar.

The information you provided was very beneficial to many Tennesseans with these diseases affecting the immune system.

The research you are conducting in the area of cancer research and immune system disease is valuable to so many people, and we thank you.

The State of Tennessee owes you our gratitude in assisting our citizens with alternative therapies in dealing with the treatment of many severe diseases.

Again, we thank you and look forward to having you back in our state again.

Respectfully yours,

Nathan Vaughn
2nd District State Representative

Japanese Society of Complimentary and Alternative Medicine.
Japanese Immunology Society



感謝状

Mandook Choneum, Ph. D. 殿

あなたに 私立 東洋医学免疫研究会
の研究に際し 始終一貫誠意を用い
て事にあたり多大な成果をおげ当会
の業種に参加して下さりまして、
本日はここに当会を代表し 深い感謝
の意を表します。

平成七年十一月十六日


東洋医学免疫研究会


会長 佐藤 正

原宿免疫センター

理事 瀬戸 良





THE FILIPINO-CHINESE MEDICAL SOCIETY, INC.
3RD SCIENTIFIC MEETING AND
2ND ONCOLOGY SYMPOSIUM
"ROLE OF IMMUNOTHERAPY IN CANCER"
SPONSORED BY:
 TAN YAN KEE FOUNDATION
JULY 18, 2005





The
FILIPINO-CHINESE MEDICAL SOCIETY, INC.

presents this

PLAQUE OF APPRECIATION

to

MAMDOOH GHONEUM, Ph. D.

In grateful recognition of his invaluable contribution
as GUEST SPEAKER of the
3RD Scientific Meeting and 2ND Oncology Symposium of the
Filipino-Chinese Medical Society, Inc., discussing the topic
"ROLE OF IMMUNOTHERAPY IN CANCER".

Given at Century Park Hotel this 18th day of July,
year two thousand and five.

CARMENCITA LO, M.D.
President

SUSAN LEE, M.D.
Chairman
Scientific Committee

NELSON LIM, M.D.
Secretary

TERESITA DY UY, M.D.
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Committee on Honors & Awards





The Embassy of the
Arab Republic of Egypt

The Egyptian Cultural
& Educational Bureau

Honor the Cancer Research of

DR. MAMDOOH GHONEUM

Charles Drew University of
Medicine and Science
University of California, Los Angeles

Washington, DC
March 25, 2010



Wadi Halfa

29

32

36

gypt

Legend:
- International boundary
• National capital
- Railway
- Road
Scale: 1:100,000,000



