

# Colostrum and Alzheimer's Disease

By John Buhmeyer, MS

A startling discovery promises hope for Alzheimer's sufferers and their families. In a new clinical trial, a colostrum component is found effective in the treatment of Alzheimer's disease (AD)!

Proline Rich Polypeptides (PRPS) sometimes called Colostrinin, a component of colostrum, is found to improve the mental functioning of Alzheimer's patients. Researchers at the University Medical School in Wroclaw, Poland, conducted a double-blind, placebo-controlled study showing that oral administration of colostrinin, a proline-rich polypeptide (PRP) complex isolated from colostrum, improves the outcome of AD patients with mild to moderate dementia. Additionally, colostrinin was found to be a remarkably safe natural supplement.

In this study, forty-six AD patients were divided into three groups. The first group received colostrinin orally (100 micrograms every other day), the second group received commercially available bioorganic selenium (100 micrograms every other day), and the third group received a placebo. Each patient completed ten cycles of treatment, each lasting three weeks with a two-week break between each cycle, during the course of one year. The outcomes were assessed by psychiatrists blinded to the treatment assignments.

Results: 8 of the 15 AD patients treated with Colostrinin improved, while the 7 other AD patients in this group stabilized. In contrast, none of the 31 mild-to-moderate AD patients from the selenium or placebo groups improved.

## **E. coli bacteria can play a role in Alzheimer's**

Colostrum may have an additional role to play in a protocol treatment for Alzheimer's. Research at Washington University School of Medicine in St. Louis has reported that certain strains of the bacterium, *E. coli*, can produce fibers similar to those thought to cause Alzheimer's. "In AD, these amyloid fibers accumulate in the brain and form plaques. The fibers produced by *E. coli* form a meshwork around the bacteria which joins them together in clusters and makes them more resistant to antibiotics as well as the body's natural immune defenses.

This finding raises the important question of whether bacterial infections play a role in amyloid diseases, including Alzheimer's. The researchers believe it is possible that either the amyloid fibers produced by bacteria may form some of the plaques in the brain of AD patients or that the bacterial infection may in some way trigger plaques to form from amyloid material already produced by the body.

## **Colostrum's effect on *E. coli***

Colostrum promotes the re-growth and re-colonization of beneficial bacteria in the gastrointestinal (GI) tract which helps fight harmful bacterial invaders, including *E. coli*. The results of a study conducted at the International Medical Center of Japan strongly suggest that the administration of bovine colostrum is effective as protection against colonization and infection by *E. coli* 0157.<sup>3</sup>

Prior to this study, researchers had demonstrated that *E. coli* 0157:H7 strains are susceptible to the antimicrobial effects of bovine lactoferrin (a powerful antimicrobial component of colostrum) and its peptides."

Scientists have determined that up to 90% of all infectious disease enters the body through the GI tract. Colostrum naturally contains a unique combination of immune and growth factors to heal the GI tract and prevent infectious agents from being absorbed into the body. Immunoglobulins (IgA, IgF, IgE and IgM), lactoferrin and other immune factors can kill, inhibit and prevent the reproduction of pathogenic invaders (infections) and protect against toxins.

## **Colostrum: a prophylactic for Alzheimer's**

Researchers at Washington University School of Medicine in St. Louis have new evidence that AD begins to affect the brain even before a person experiences the memory loss and other cognitive impairments that accompany the disorder."

By the time a person experiences the earliest clinical symptoms of Alzheimer's, there is already a massive amount of amyloid in the brain. Amyloid is a normal substance in the body, but it can accumulate in plaques in the brain leading to the death of neurons, loss of memory, loss of control of bodily functions, and eventually death. This process of storing amyloid in the brain is very slow and may take up to 20 years. According to the latest estimates, approximately 12 million people worldwide suffer from Alzheimer's disease (AD). There are an estimated 4 million Americans with AD now, and the total is expected to grow to about 14 million by 2050.<sup>6</sup>

Studies abound demonstrating a cause-and-effect relationship between bacterial or viral infections and various diseases. Perhaps Alzheimer's disease is promoted by infectious invaders as well. In this case, a daily dose of high-quality colostrum may be your ticket to future health. Hopefully, further Alzheimer's research will lead to new treatments and cures for AD, as well as increase our awareness of how antibiotic-resistant infections can affect our overall health.

Researchers are seeking to identify the factors which will increase one's risk of developing Alzheimer's. A lot of work needs to be done before we can fully understand what causes a person to develop the amyloid plaques in the brain that cause Alzheimer's, as well as treatments or cures for this debilitating brain disease. There is evidence to support the following recommendations to reduce your risk of AD:

- Heal the gastrointestinal tract, as this is where up to 90% of infectious agents enter the body. Colostrum contains a perfect combination of immune and growth factors to heal the GI tract and prevent infection from entering the body.
- Limit aluminum exposure. Sources of aluminum are cooking utensils, indigestion remedies (such as Gaviscon or other brands containing aluminum), deodorant! antiperspirants, and water supplies to your house.
- Obtain proper amounts of folic acid, vitamin E, and B vitamins in the diet.
- Strengthen your immune system, so you can avoid infections that may lead to disease.
- Continue to stimulate your mind, even as you age.
- Avoid trauma to the brain.

### **Natural Delivery System**

Most important is the natural delivery system provided by the mammary gland to ensure that colostrum reaches the portion of the gastrointestinal system where it can do the most good. When colostrum is secreted by mammary cells, it does so by what is called apocrine secretion. This means that colostrum is collected in a globule in the mammary cell that is surrounded by cell membrane. When the globule is released into the mammary duct, the cell membrane remains around the colostrum, protecting it until it reaches the intestine where it can be absorbed by the body. Dried, freeze dried and defatted colostrum products lose this protective membrane, leading to degradation of colostrum proteins in the stomach.

Colostrum which has the membrane phospholipids reconstituted, however, retains the protective membrane and is much more effective. New Life Solutions Colostrum-LD products (Sovereign Laboratories. - Sedona, AZ) utilize LD or Liposomal Delivery technology, a bio-identical delivery system in which the membrane phospholipids are reconstituted to protect the colostrum and enhance delivery for all nutrients, making colostrum's unique components up to 1,500% more bioavailable and effective. 7

### **Phospholipids provide more than natural delivery**

In addition to enhanced delivery, the phospholipids in Colostrum LD are shown to have positive health benefits of their own. Phospholipids are an excellent source of choline, which has been shown to increase brain function.

Phospholipids are part of the membrane structure in the brain and play an important part in the chemical make-up of neurotransmitters. Neurotransmitters are chemicals that stimulate muscle action or nerve impulses in the body. They are similar to electrical currents that turn on light bulbs or other appliances. Without neurotransmitters, we would be unable to move, talk, eat, drink or feel. One very important neurotransmitter is acetylcholine. As humans age, the brain's ability to manufacture acetylcholine is greatly reduced. This can make it difficult for the brain to store and retrieve information. Studies have shown that phospholipid supplementation increases choline and, therefore, acetylcholine levels in the brain. Researchers believe that elevating the levels of these neurotransmitters may help increase cognitive abilities over time as well as modify the course of Alzheimer's disease.

One very important phospholipid in Colostrum LD called phosphatidyl serine (PS), may reduce the risk of cognitive dysfunction and dementia in the elderly. Compromised brain function and Age Associated Cognitive Decline (AACD) begin at the onset of middle age and are commonly associated with decreased levels of Phosphatidyl Serine. PS is

found on the surface of membranes in brain cells. It stimulates the production of a brain messenger chemical that helps regulate memory by increasing the availability of glucose in the brain. (Glucose is the main fuel for metabolic reactions in the brain.) PS has been shown to stimulate production of dopamine and protein kinase C and protects against stress-induced behavioral changes. PS is theorized to reduce cortisol (stress hormone) production during exercise thus improving recovery time. Current studies are investigating the effects on depression and other age-associated memory impairments.

## Conclusion

Research demonstrates that colostrum with a phospholipid delivery system may be an excellent prophylactic against Alzheimer's disease, cognitive dysfunction and dementia. PRP, or colostrinin, a main component of colostrum, is known to improve the mental functioning of Alzheimer's patients. Lactoferrin, and other antimicrobial components in colostrum, can protect against colonization and infection by *E. coli*, an organism which researchers believe may play a role in amyloid diseases, including Alzheimer's. Colostrum which has the membrane phospholipids reconstituted offers the additional benefits of choline to increase brain function and PS to reduce the risk of cognitive dysfunction and dementia in the elderly.

## References:

1. Leszek, J., AD. Ingot, M. Janusz, J. Lisowski, K. Krukowska and JA Georgiades. Colostrinin: a proline-rich polypeptide (PRP) complex isolated from ovine colostrum for treatment of Alzheimer's disease. The Psychiatric Unit, University Medical School, Wroclaw, Poland.
2. Chapman, M.R., L.S. Robinson, J.S. Pinkner, R. Roth, J. Heuser, M. Hammar, S. Normark and S.J. Hultgren. Role of *Escherichia coli* curl! operons in directing amyloid fiber formation. *Science*. 2002 Feb 1 ;295(5556):851-5.
3. Funatogawa, K., Ogasawara, M., Yamasu, H., Kirikae, F., Kimotsuki, K. and T. Kirikae. Protective Effects of Colostrum Administration on *E. coli* 0157:H7 Infection. Japanese Society of Tropical Medicine/Japanese Association for International Health. 1999. (Abstract)
4. Shin, K., Yamauchi, K., Teraguchi, S., et al. Antibacterial activity of bovine lactoferrin and its peptides against enterohaemorrhagic *E. coli* 0157:H7. *Letters in Applied Microbiology* 26:407- 411, 1998. (Abstract)
5. W.P. Goldman, J.L. Price, M. Storandt, EA Grant, D.W. McKeel, Jr., E.H. Rubin, and J.C. Morris (2001). Absence of cognitive impairment or decline in preclinical Alzheimer's disease. *Neurology*, 56: 361-367.
6. The Associated Press and Reuters, Clinton earmarks \$50 million for Alzheimer's research. <http://www.cnn.com/2000/HEALTH/07/16/alzheimers.disease/>
7. Robert D. Milne, MD PC Liposomal Encapsulation Technology. Proven Nano-chemistry that can make health and longevity supplements many times more efficient and effective. Life's Fountain Books, Henderson, NV 2004