

persons) in performing various anabolic and catabolic processes.¹⁵⁻¹⁹ Howell and others have reported that the amount of enzymes that pass through the stomach is even higher (nearly 50%²⁰). Howell has also reported that individuals with significant health problems have been found to have lower levels of enzymes than healthy individuals and that oral enzyme supplementation has been helpful for many such people.²⁰ Although this position is not universally accepted,²¹ a study in the Journal of Surgery showed that oral pancreatic supplementation resulted in improved enzyme and growth levels for children who had a pancreaticoduodenectomy.²² Recent research has suggested that bovine glandulars may be helpful for thyroid support,²³ myoclonic seizures,²⁴ and even CHARGE syndrome.²⁵

Some glandular extracts also contain small, safe amounts of hormones that may contribute to their possible effectiveness. The thymus gland contains thymic hormones which Schulof found may enhance immune response for people with HIV¹². It should be noted that many substances contained within animal tissues are similar or identical to their human counterparts,^{1,26-28} including certain enzymes²⁶ and even T cell gene regions.²⁷ One advantage of glandulars over herbs is that raw ovine (sheep) and bovine (cow) glandulars often contain enzymes that are identical to those in the human body, while herbs rarely do.

Some research indicates that protein contained within cow's milk appears to slow the growth of certain human toxic cells;²⁵ also cows do not appear to be that susceptible to getting breast cancer.³⁰ Thus it may be reasonable to conclude that other substances contained within or derived from bovine/ovine sources may be helpful for other human diseases.

Harrower, a pioneering researcher of oral glandulars, believed glandulars were effective because endocrine glands experienced something he referred to as "hormone hunger."³⁰ Harrower wrote:

"The practical application of this idea concerns the administration of combinations of glands in presumed pluriglandular disturbances. If, for instance, in the conditions mentioned above there is a noticeable deficiency in several of the glands of internal secretion, the thyroid, ovaries and pituitary gland for instance, there may be varying degrees of hormone hunger on the part of the organs involved, and this will influence very definitely the amount of hormones that

may be missing or needed by the glands to be stimulated."

It should be noted that when Harrower used the term "hormone" this probably should be interpreted to also include nutrients, both known and unknown, including enzymes, peptides, and hormone precursors. Harrower referred to vitamins (then newly discovered) as "plant hormones" and he called hormones the "active principles obtained from certain glands."³⁰

"There is a lot of controversy about the activity of glandulars given orally. It appears the effectiveness of glandulars comes in a multi-facteted way. These facets may be grouped into three basic categories: A) Hormonal; B) Enzymatic; C) Nutritive. Any gland given for therapeutic use should contain the whole nondenatured gland. The hormones are at the same strength as those found in the natural organ, except that the water has been removed leaving only the dried concentrated tissue. These hormones fall into various categories and forms: 1) Steroids; 2) Peptides; 3) Catecholamines; 4) Amino Acids; 5) Prostaglandins; 6) Nucleotides. Their hormonal factors can be broken down into two categories: A) Lipid soluble hormones; B) Water soluble amino bases and acids. The problem with steroid or prostaglandin therapy is that the medical sciences have removed them from the naturally occurring matrix which has a fine balance of steroids and prostaglandins. There is a natural law which applies in the universe and even more so in biochemistry. For every biochemical reaction or mechanism, there is an opposing 'feedback' mechanism. For this reason the balance must be maintained and taking glandulars are both therapeutic and very safe since this balance is maintained. It is only when the hormones are isolated and given in large doses that side effects take place, such as ulcers in steroid therapy or liver destruction in synthetic testosterone therapy. The second class of hormones is more diverse, but just as effective and important. These are the polypeptides and phylogenetic amines such as neurotransmitters and catecholamines. The incredible thing about these peptides is that they become more active upon digestion. They are normally secreted in long chain proteins which are then broken down into endorphins which are then digested by specific proteases into the active hormones. Therefore, most of the protein is assimilated in peptide form not amino acid form. What this means is that glandulars can actually be activated by digestion."³¹ It should be noted that bovine thyroid does not itself contain substantial amounts of thyroxin which is why it is appropriate to feed the human

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