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## Global Prevention of Adult Cancers

Item Type	Poster Abstract
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DOI	<a href="https://doi.org/10.13028/6je7-g612">10.13028/6je7-g612</a>
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Download date	2026-06-07 04:49:25
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Link to Item	<a href="https://hdl.handle.net/20.500.14038/27796">https://hdl.handle.net/20.500.14038/27796</a>

## Global Prevention of Adult Cancers

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Growth hormone receptor deficient (GHRD) individuals in Ecuador are cancer free their entire lifetime due to low insulin-like growth factor (IGF) levels. This IGF deficiency protected that small GHRD population from the wide array of 20 different cancer types that caused death in their IGF-replete relatives. This suggests that the initiation or progression of many human cancers is dependent on IGF.

Those GHRD individuals are short statured due to their life-long IGF deficit but otherwise are surprisingly healthy and long-lived (some >80 years old). Therefore, we are developing IGF-suppressive vaccines for use in fully grown adults with the hope of gaining the same potent anti-cancer impact seen in low IGF individuals with GHRD.

This compelling human example of the cancer prevention benefits of low IGF activity coupled with its probable safety in physically mature people form the basis of our unprecedented cancer suppression strategy. We designed specific vaccines to prevent the emergence of age-dependent cancers by cutting off their essential early supply of IGF.

Our vaccines actively induce antibodies to neutralize IGF directly or obstruct the activity of a key enzyme that regulates IGF bioavailability. Protective vaccination would be initiated at middle age since most human cancers occur beyond age 60 and since this postponement will circumvent any impairment of normal growth or other functions. The continuous presence of those inhibitory antibodies will keep IGF activity at a constantly low level and thereby preemptively block the development of incipient cancers later in life.

These prevention vaccines could be used:

- 1) for people with a genetically high likelihood for developing familial forms of cancer,
- 2) as an adjuvant therapy following precancerous growth removal,
- 3) to inhibit the recurrence of disease for cancer patients who are in remission, and
- 4) as a general prophylactic to protect against spontaneous, age-dependent cancers.