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TITLE: Probiotic (VSL#3) for Gulf War Illness

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The overall objective of	of the study is t	o determine th	e effect of prob	oiotic Visbiom	ne™on:
1) Intestinal symptoms	s of Irritable Bo	wel Syndrome	e (IBS) and 2) N	lon-intestinal	symptoms (fatigue, joint pain,
insomnia, general stiff	ness and head	lache) associa	ted with IBS, th	e symptoms	of Gulf War (GW) illness, 3)
The manuscript on Th	e Effect of pro	biotics on IBS	and GW illness	was publish	ed in Oct 2022 The effect of
probiotics on serum cy	ytokines was p	resented on O	ct 25, 2022 in tl	he Am Gastr	oenterology Conference.
The stool samples ana	alysis is ongoin	g			
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## **Table of Contents**

# <u>Page</u>

Introduction5
Body5
Key Research Accomplishments6
Reportable Outcomes7
Conclusion
References
Appendices

### Introduction:

Gastroenteritis plays a major role in changing intestinal microflora. More than one third of Gulf War (GW) veterans report gastroenteritis during deployment and it is a risk factor for development of irritable bowel syndrome (IBS) after deployment. We also demonstrated that there is a strong association between IBS and extra-intestinal disorders (e.g. fatigue, joint pains, insomnia, generalized stiffness, and headache). This would suggest that IBS as well as extra-intestinal disorders in GW veterans have a unifying etiology. There is scientific evidence that probiotics by restoring normal gut flora improve symptoms of IBS. Probiotics have also been shown to improve arthritis and fatigue by changing fecal flora. This is the basis for our present protocol to study the effect of probiotics on GW illness.

#### Body:

During this year the following goals were accomplished: The manuscript, The Effect of Probiotics on IBS with GW illness was published in the peer reviewed journal. *Fed Pract*. 2022 October;39(10):410-417 | 10.12788/fp.0322

The effect of Probiotics on serum cytokines was completed and was presented as a poster in the American College of Gastroenterology annual meeting.

The stool samples have been transported to V.A. Medical Center in Charleston, SC for microbiota analysis. The previous collaborator at Laurence Berkeley Laboratory, CA retired last year and is no longer available to complete the stool microbiota analysis. We have found another collaborator in South Carolina who has kindly agreed to complete the analysis. This investigator has further moved to Long Beach VAMC in Sacramento, CA. We hope to complete the stool microbiota analysis by the end of this year (December 2022).

The methods used by the previous collaborator in Laurence Berkeley Laboratory to do partial work were different; now newer methods are available; all the samples will be re-analyzed.

### Key Research Accomplishments.....

- The manuscript on the "Effect of Probiotics on Irritable Bowel Syndrome with Gulf War illness" was published this month.
  Fed Pract. 2022 October;39(10):410-417 | 10.12788/fp.0322
- The poster on the Effect of Probiotics on Serum Cytokines in Irritable Bowel Syndrome with Gulf War illness was presented in the Am College of Gastroenterology meeting in October 2022. The manuscript is under publication.
- Stool microbiota analysis should complete later this year.

Reportable Outcomes.....

Nil.

# Conclusion:

Study has stopped enrolling; abstract was published and the manuscript is under review for publication.

Stool samples microbiota data are being analyzed.

References.....

Nil.

Appendices.....

Nil.