

Okinawa-Küche

Algen und Süßkartoffeln – eher zu wenig essen – 80% statt 100% - höchste Langlebigkeit in der Welt

Anthropologe Craig Willcox

## Die Super-Senioren von Okinawa

Von unserer Korrespondentin ANGELA KÖHLER (Die Presse) 05.08.2006

**Japan. Nirgendwo sonst auf der Welt gibt es so viele lebenslustige Hundertjährige.**



Uraltes Japan: Kin Narita und Gin Kanie waren mit 107 die ältesten Zwillinge der Welt. | (c) EPA

Tokio. Es ist nie zu spät. Man kann auch mit 90 noch durchstarten. Yasuku Higa rückt ihre Baseball-Kappe zurecht, die sie als Angestellte des Obst- und Gemüse-Marktes von Ogimi kennzeichnet. An der Straße 58, die Japans subtropische Südünsel durchzieht, verkauft die flotte Seniorin die begehrten Bittergurken und Okinawa-Orangen.

"Yasuku ist meine jüngste Mitarbeiterin und frische Berufseinsteigerin", stellt Marktbesitzer Keiki Tedokon, selbst 77, die ansteckend fröhliche Oma vor. "Das ist tatsächlich mein erster Job", bestätigt die kleingewachsene Okinawaerin. "Ich habe mit 91 Jahren angefangen zu arbeiten und es macht großen Spaß."

Sie sind ein Phänomen, die Super-Senioren von Okinawa. Nirgendwo sonst auf der Welt leben so viele Menschen, die älter als 100 sind. Derzeit gehören mehr als 630 der insgesamt 1,3 Millionen Bewohner des Archipels zwischen den japanischen Hauptinseln und Taiwan dem illustren Kreis der "100plus" an.

"Die Frauen in den höheren Semestern sehen, dass sie gebraucht werden. Sie arbeiten, denken, laufen und bleiben damit kerngesund", meint Keiki Tedokon. "Hier sind Altersheime überflüssig". Gut 700 Euro verdient Frau Higa im Monat und freut sich über die Aufbesserungen ihrer Pension. Von 8.30 Uhr bis 17.00 Uhr packt sie Orangen, Limetten, Sellerie, Tomaten und Gurken aus lokalem ökologischen Anbau ab.

Zweifelsfrei profitieren Okinawas Greise von ihrer natürlichen Ernährung. Fast täglich gibt es pfannengerührtes Gemüse mit Okinawa-Tofu, dazu Misosuppe mit Algen, frischen

Salat und Bittergurke mit Sobanudeln und etwas Schwein. Und natürlich steht Kombu auf dem Speiseplan - der gesundheitlich hochgepriesene braune Seetang, von dem die Menschen in Okinawa dreimal mehr essen als der japanische Durchschnitt. Die von China beeinflusste Okinawa-Küche soll nach Expertenmeinung selbst die ausgewogene, fettarme japanische Kost noch übertreffen.

Rund 80 Prozent aller Lebensmittel, die in Okinawa aufgetischt werden, sind pflanzlich und sie werden roh, gedämpft oder pfannengerührt zubereitet. Das wichtigste Nahrungsmittel ist jedoch nach wie vor die Süßkartoffel, die so ziemlich alles hat, was ein Nahrungsmittel empfehlenswert macht. Das japanische Grundnahrungsmittel Reis kam erst vor rund 60 Jahren nach Okinawa und wird von den Alten nur in Maßen konsumiert. Fleisch essen sie nur als Beilage, nie als Hauptgericht. Die Generation um die Hundert nimmt etwa 1800 Kalorien am Tag zu sich und nicht 2500 wie in den meisten westlichen Ländern. Die goldene Regel in Okinawa heißt "hara hachibu" - den Magen zu 80 Prozent voll. "Viele Ältere sind ein wenig unterernährt", sagt der Altersforscher Craig Willcox, der seit 1976 die Rekordalten in Japans Süden wissenschaftlich erforscht. "Das ist jedoch die beste Strategie überhaupt für ein langes Leben."

Auch besondere soziale Faktoren spielen eine wesentliche Rolle. "Die Leute sind sehr aktiv, treiben Sport an der frischen Luft, arbeiten im Garten, gehen viel spazieren und sie tanzen gern ihre Volkstänze, die vom Bewegungsablauf wie Thai-chi funktionieren", beobachtet Willcox. Außerdem werden die Alten in Okinawa verehrt, nicht nur geduldet. Sie wollen und dürfen arbeiten, solange sie geistig und körperlich dazu in der Lage sind.

Nicht nur die Frauen leben lange auf Okinawa. Auch für die meisten Männer lautet die gute Botschaft, dass es nie zu spät ist. Der Champ der 100plus-Herrenriege ist Shokun Yoshihama, der im Juni 101 Jahre alt wurde und in alter Frische der Beweis für unerschütterlichen Optimismus ist, der viele Insulaner auszeichnet.

Mit 65 heiratete der sechsfache Vater zum zweiten Mal, mit 97 baute er ein neues Haus, und noch heute geht der erfolgreiche Geschäftsmann täglich in seine Firma. Seine gleichaltrigen Freunde besucht er kaum noch. "Die liegen fast alle im Bett und reden vom Sterben", erzählt Yoshihama. Er hasse solche Konversationen. "Ich mag Witze und Sex mit meiner 68-jährigen Frau, die für mich herrlich jung ist."

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Dr. **Craig Willcox**, Ph.D. is a medical anthropologist and gerontologist and internationally recognized expert in healthy aging and cross-cultural gerontology ...

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## Okinawa Research Center for Longevity Science

More than Three Decades of Research on Human Health and Longevity

ORCLS Researchers: Dr. D. Craig Willcox

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D. Craig Willcox, M.H.Sc., Ph.D

Co-Principal Investigator, Okinawa Centenarian Study  
Associate Professor, Okinawa International University, Department of  
Human Welfare

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**Dr. Craig Willcox, Ph.D.** is an internationally recognized expert in healthy aging and cross-cultural gerontology with training in medical anthropology, gerontology and public health science.

He is currently Associate Professor of International Health/Welfare and Gerontology at Okinawa International University and a Co-Principal Investigator of the Okinawa Centenarian Study, a U.S. National Institutes of Health and Japan Society for Promotion of Science funded study of the genetic and lifestyle determinants of exceptional longevity. Dr. Willcox is also Research Associate at University of Hawaii's Pacific Health Research Institute. Dr. Willcox trained in medical anthropology, gerontology and public health science at the University of Toronto and University of the Ryukyus. He has published and lectured extensively over the past decade in the areas of human ecology and aging, as well as nutritional and public health approaches to successful aging.

Dr. Willcox is particularly interested in what can be learned from a bio-behavioral (bio-cultural) approach to the study of human aging -- linking physiology, culture, and society through extensive fieldwork and rigorous laboratory investigations in order to better understand the dialectic of nature and culture in diverse ecologic and ethnographic settings. His cross-cultural approach to the study of human aging has led him to spend many years living, teaching and doing research in Japan. He speaks fluent Japanese. Dr. Willcox is a member of several professional societies including the International Epidemiological Association, Medical Anthropology Society, and Gerontological Society of America among others. His research work has been supported by the U.S. National Institutes of Health, U.S. National Institute on Aging, Medical Research Council of Canada, University of Toronto, The Japan Society For Promotion Of Science, the Japan Foundation and the Japan Ministry of Education, Science, Culture, Sports and Technology, among other sources.

#### A. Positions and Honors

1994-present Co-Investigator, Okinawa Centenarian Study (OCS).

1995-2002 Research Assoc, Inst. for Human Development, Life Course and Aging, Univ. of Toronto

1997-present Research Assoc, Okinawa Research Center for Longevity Science (ORCLS)

1999-2007 Assistant Professor, Okinawa Prefectural University-College of Nursing

2002-present Research Assoc/Co-investigator, Pacific Health Research Institute, University of Hawaii

2007-present Associate Professor, Okinawa International University, Department of Human Welfare

#### Awards and Honors

1985-1986 University of Calgary Dean's List, Undergraduate

1985-1986 Province of Alberta Undergraduate Scholarship

1986 University of Calgary Alumni Award

1986 Calgary Herald Centennial Award

1989 Graduated with Academic Honors (Distinction), University of Calgary

1995 University of Toronto Graduate Assistantship

1995 Ontario Graduate Scholarship

2002 Multiple Sclerosis Society-Best Wellness Book Nomination

## B. Selected Peer-reviewed Publications

Suzuki M, Willcox BJ, Willcox DC. Implications from and for food cultures for cardiovascular disease: longevity. *Asia Pacific J Clin Nutr* 2001;10(2):165-171.

Takakura M, Nagayama T., Sakihara S, Willcox DC. Patterns of risk behavior among high school students. *J School Health* 2001;Vol 71(1):23-29.

Todoriki H, Willcox DC, Kinjo Y, Takakura M, Sasaki S, Ariizumi M. The post-war nutrition transition in Okinawa: Changes in body composition and fat intake. *Japanese J Human Health Ecol* 2002, 68:56-57.

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Willcox BJ, Abbott RD, Yano K, Rodriguez BL, Willcox DC, Curb JD. C-reactive protein, cardiovascular disease and stroke: new roles for an old biomarker. *Expert Rev Neurotherapeutics* 2004;4:507 - 518.

Willcox BJ, Yano K, Chen R, Willcox DC, Rodriguez BL, Masaki KH, Donlon T, Tanaka B, Curb JD. How much should we eat? The association between energy intake and mortality in a 36-year follow-up study of Japanese-American men in Hawaii. *J Gerontol A Biol Sci Med Sci.* 2004;59:789-95.

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Willcox DC, Willcox BJ, Todoriki H, Curb JD, Suzuki M. Caloric restriction and human longevity: What can we learn from the Okinawans? *Biogerontology* 2006;7:173-77.

Willcox BJ, He Q, Chen R, Yano K, Masaki KH, Grove JS, Donlon TA, Willcox DC, Curb JD. Midlife risk factors and healthy survival in men. *JAMA* 2006;296:2343-2350.

Willcox DC, Willcox BJ, Hsueh WC, Suzuki M. Genetic determinants of exceptional human longevity: insights from the Okinawa Centenarian Study. *AGE* 2006;28:313-32.

Willcox DC, Willcox BJ, Shimijiri S, Kurechi S, Suzuki M. Aging Gracefully: A Retrospective Analysis of Functional Status in Okinawan Centenarians. *Am J Geriatr Psychiatry* 2007;15:252-256.

Willcox DC and Willcox BJ. The cultural context of successful aging among older women in a northern Okinawan village: the role of productive activity. *J Cross Cultural Gerontol* 2007;22:137-165.

Willcox DC. The biodemography of exceptional survivorship and the emergence of supercentenarians in Okinawa. *OIU J Social Welfare and Psychology* 2007 6:(1):

Willcox DC. Why do women live longer than men? A demographic analysis of male-female mortality differences in Okinawa and Japan. *OIU J Scientific Research* 2007; 11:1-16.

Willcox BJ, Willcox DC, Todoriki H, Fujiyoshi A, Yano K, He Q, Curb JD, Suzuki M. Caloric restriction, the traditional Okinawan diet and healthy aging. *Ann N Y Acad Sci.* 2007;1114:434-55.

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Scientific Abstracts

Willcox DC, Willcox BJ. Okinawan longevity: Demographic and epidemiological perspectives. *J Okinawa Chubu Hospital* 2001;27(suppl.2):24-25.

Willcox BJ, Willcox DC, Todoriki H, Suzuki M. Successful aging in Okinawa: Low cardiovascular risk in Japan's oldest-old. *JAGS* 2001;49(4):P102.

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Willcox DC, Suzuki M, He Q, Yoo K, Curb JD, Willcox BJ. All in the Family: Do Siblings of Centenarians also live longer? Abstracts of the 57th Annual Scientific Meeting, Gerontological Society of America. November 2004. Washington, DC.

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Willcox BJ, Hsueh WC, He Q, Willcox DC, Curb JD, Suzuki M. Substantial advantage for longevity in siblings of Okinawan centenarians. *Genetic Epidemiology* 2005;29(3):286-7.

Schell J, Allman R, Sawyer-Baker P, Willcox B, Dodner E, Willcox DC. Life space mobility among rural Okinawan older adults. *The Gerontologist* 45;2007:593-594.

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Willcox BJ, Willcox DC, Curb JD, Allman RM. Exceptional longevity in Okinawa: Interdisciplinary and cross-national perspectives on healthy aging. *Gerontologist* 2005;45(Sp. Iss. 2):593-4.

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Willcox BJ, Willcox DC, He Q, Chen R, Yano K, et al. Biological insights for healthy aging. *The Gerontologist* 47;2007:465.

Willcox BJ, Willcox DC, Curb JD. The genetic epidemiology of human longevity:healthy aging around the globe *The Gerontologist* 47;2007:401

### C. Research Support

#### Ongoing

Japan Society for the Promotion of Science (Willcox DC) 04/01/06-03/31/09

The purpose of this study is to assess the prevalence and timing of age-related illness among centenarians in Okinawa from the Okinawa Centenarian Study (OCS) from the years 2000-2008 and compare the findings to other centenarian studies in the U.S.

Role: Principal Investigator

Japan Society for the Promotion of Science (Todoriki H) 04/01/06-03/31/09

#### The Chample Study

In this project we are carrying out an intervention study that will examine oxidative stress markers among middle-aged participants fed a diet of traditional Okinawan vegetables.

Role: Co-Investigator

#### Completed

5 U19 AG023122-03 (Cummings) 07/01/06-06/30/07

California Pacific Medical Center Research Institute

The Genetic Basis for Exceptional Longevity in Okinawa

Aims: Investigate the linkage disequilibrium patterns of Okinawans and determine whether this genotyping platform provides adequate coverage for a larger genome-wide association study.

Subcontract Co-PI

Japan Society for the Promotion of Science (Todoriki H) 04/01/02-03/31/05

Public Health and Culture Change in Post-war Okinawa

In this study we documented the post-war establishment of public health in Okinawa and the accompanied epidemiological transition from 1945 to the present.

Role: Co-Investigator

1 KO8 AG22788-01 (Willcox B) 09/30/03-12/31/05



NIH/NIA

Defining the Genetics of Exceptional Human Survival

Aims: Career development award that provided salary and educational support to help plan a study of cross-national survival characteristics of Okinawan Japanese with other cohorts of exceptionally long-lived men and women, particularly the Honolulu Heart Program cohort, in order to determine the etiological factors important for the healthy aging phenotype.

Role: Co-Investigator

1 R03 AG21293-01 (Willcox B) 09/30/02 - 08/31/03

NIH/NIA

The Genetics of Exceptional Longevity in Okinawa-Japan

The major goals of this project are to identify single nucleotide polymorphisms associated with exceptional survival in Okinawan-Japanese Centenarians from the Okinawa Centenarian Study (OCS).

Role: Co-Investigator

48553 (Willcox B) 07/01/01 - 06/30/02

Beth Israel Deaconess Medical Center/Warren-Williams-Richardson Fellowship

Harvard Medical School

Successful Cognitive Aging in Centenarians

The major goals of this project were to study the prevalence of dementia in a population-based study of centenarians in Okinawa (OCS).

Role: Co-Investigator

Japan Foundation (Willcox DC) 04/01/01-03/31/02

Lifestyle Determinants of Healthy Aging in Okinawa

With this grant we analyzed lifestyle and related factors that may be responsible for the increase in life expectancy in post-war Okinawa and produced an educational video based on the findings of the Okinawa Centenarian Study for public distribution.

Role: Co-Principal Investigator

Japan Ministry of Education, Culture,

Sports, Science and Technology (Willcox, DC) 10/01/96 - 03/31/99

Community Health, Longevity and Related Factors in Okinawa, Japan

An investigation of the role of community health in the growth of life expectancy and the profusion of centenarians (from the OCS) in post-war Okinawa, Japan

**Dr. D. Craig Willcox**



***Assistant Professor, Okinawa Prefectural,  
University- College of Nursing, Okinawa, Japan.***

**BIOGRAPHY**

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Dr. Craig Willcox, Ph.D. is a medical anthropologist and gerontologist and internationally recognized expert in healthy aging and cross-cultural gerontology. He is currently Assistant Professor at Okinawa Prefectural University--College of Nursing and Co-Principal Investigator of the Okinawa Centenarian Study, a U.S. National Institutes of Health and Japan Ministry of Health, Labor and Welfare funded study of the genetic and lifestyle determinants of exceptional longevity. Dr. Willcox is also Research Associate at University of Hawaii's Pacific Health Research Institute.

Dr. Willcox trained in medical anthropology, gerontology and public health science at the University of Toronto and University of the Ryukyus. He has published and lectured extensively over the past decade in the areas of human ecology and aging, as well as nutritional and public health approaches to successful aging.

Dr. Willcox is particularly interested what can be learned from a bio-behavioral (bio-cultural) approach to the study of human aging -- linking physiology, culture, and society through extensive fieldwork and rigorous laboratory investigations in order to better understand the dialectic of nature and culture in diverse ecologic and ethnographic settings. His cross-cultural approach to the study of human aging has led him to spend many years living, teaching and doing research in Japan. He speaks fluent Japanese.

Dr. Willcox is a member of several professional societies including the American Anthropological Association, Society for Nutritional Anthropology, Medical Anthropology Society, and Gerontological Society of America. His research work has been supported by the U.S. National Institutes of Health, U.S. National Institute on Aging, Medical Research Council of Canada, University of Toronto, the Japan Foundation and the Japan Ministry of Education, Science, Culture, Sports and Technology, among other sources.

## 2005 CONFERENCE ABSTRACT

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### [An Investigation into the Worlds Longest-Lived People: An Introduction to the Okinawa Centenarian Study](#)

The **Okinawa Centenarian Study (OCS)**: The OCS is the world's longest-running population-based study of centenarians (29<sup>th</sup> year), and has examined over 700 centenarians and resulted in over 200 scientific publications. Led by its Founder, Director and Principal Investigator, Dr. Makoto Suzuki since 1976, and supported by Co-Principal Investigators Drs. Bradley and Craig Willcox since 1994, the purpose has been to define genetic and lifestyle factors responsible for exceptional longevity of the Okinawans, who may be world's longest-lived people. Among the noteworthy findings are those that have contributed toward understanding the genetic basis for exceptional longevity. For example, genetic studies show that Okinawan centenarians tend to exhibit specific type-2 HLA patterns associated with lower risk for autoimmune disease and that siblings of centenarians also tend to live longer. Cardiovascular health has been found to be an important survival factor as well. Other findings have helped define biochemical and hematological parameters and hormonal patterns, assess functional abilities, measure bone density, characterize nutritional habits and assess cognitive status, among other survival characteristics of very old Okinawans. Strengths of the study include its population-based design and the high concentration of age-validated centenarians in a small geographic area. Okinawa is home to the highest ratio of centenarians among the 47 prefectures of Japan at close to 50 per 100,000 in 2004. This is the highest prevalence of centenarians ever recorded among



countries possessing a reliable age registration system. This presentation will introduce the above findings and explore underlying factors behind this successful aging phenomenon.