

We teach the venerable Chinese martial art of Tai Chi Chuan to people with autism, arthrogryposis and cerebral palsy spectra disabilities as well as Down Syndrome. We estimate 190,000 New Zealanders have these challenges. The students obtain better physical health, an inclusive social group and life goals in the form of bachelor's and master's degrees. More significantly, parents and physicians get daily digital scores so that changes in medications, diet, sleep and logistics can be quantitatively assessed – if the Tai Chi Chuan scores go up, the change was good.

Geography – One view is that New Zealand is the North Island (Te Ika-a-Māui), the South Island (Te Waipounamu) and the outlying islands including the Chatham Islands, the Cook Islands, Niue and Tokelau. The latest estimates have the populations as 3.7 million for the North Island, 1.1 million for the South Island and 22,000 total for the outlying islands. One consideration is that the two major islands are more rectangular than they are square, so the longest distances are 600 kilometers from the northern end to the southern end of the North Island and 750 kilometers from the northern end to the southern end of the South Island.

Demographics - The largest metropolitan areas are Auckland (1.7 million people), Wellington (0.5 million people), and Christchurch (0.4 million people). There are three more concentrations with over 100,000 people and eight concentrations with over 50,000 people. For location planning purposes we prefer sites that minimize van or bus distances and sites with some access to municipal transportation for older students who prefer independent living.

Genetics - Currently, the human genome contains about 20,400 protein coding genes and about 50,000 other known sequences. In the available North American and Western European data we focus on deletions, micro-deletions, mutations, translocations and nucleotide repeats in about 1500 genes with focus on 190 linked to the autism spectrum; 40 linked to the arthrogryposis spectrum; 20 to the cerebral palsy spectrum and 10 linked to Down Syndrome. We note a high incidence of food allergies (gluten, nuts and dairy), tachycardia, leukemia, diabetes and seizures. In North American and Western European samples all these total to about four percent (4%) of the population. We do not exclude students on the basis of DNA or anything but mobility (must be able to walk – we are not qualified to teach wheelchair Tai Chi). We are not aware of any large-scale genetic surveys of New Zealanders.

Teaching modes – [1] In-person in class two hours per day seven days per week with at least one teacher [2] a student at home follows the internet broadcast of a class [3] a

student at home follows his own curriculum and lessons. [4] A full day is two classes plus lunch and usually two sedentary activities such as calligraphy. One preference is to offer extended hours on weekends to teach extra-curricular material taught by grandmasters from other martial arts.

Curriculum – Our Tai Chi Chuan forms are from Chen Family style. Our Bachelor's degree requires the three unarmed forms - 18 Movements, Old Frame 1 (Lao Jia), and Old Frame 2 (Cannon Fist) - plus four Qigong routines. Three tai chi tools are taught as well as five weapons sets – double batons, single saber, single sword, spear and staff. Our Master's degree requires two unarmed forms of New Frame 1 (Xin Jia) and 2, Small Frame, Silk Reeling and five Qigong routines. Three tai chi tools are taught as well as five weapons sets – fork, double sabers, double swords, halberd, and long pole. We use the filmed interpretations of Grandmaster Chen Zhenglei as a standard. He graciously re-recorded performances in smart garments. We grade students using the International Wushu Federation standards – these would be the same standards used to evaluate neurotypical New Zealanders competing domestically or internationally. We would want to make an agreement with one or more recognized New Zealand universities to accept nominal tuition and grant performance-based degrees.

Communications – we note that there are 5.8 million cellular phones and 1.8 million landlines in use. Of some concern is that we prefer parents be able to review daily filming of students, and we prefer to be able to transmit short live videos in emergencies. We also note that there are slightly less than 4 million internet users although how many real, unique humans this represents is unclear. The class videos stress many networks when transmitted over the internet. We ourselves would have receptive and expressive disabilities when using Maori or New Zealand Sign Language.

Health and Safety – In the United States a building where we teach typically has three or four unisex bathrooms and showers. The only difference is the doors can be unlocked from the outside hall. According to the season we serve cool or warm ultra-purified water three times during a class. Due to various food allergies snacks are a challenge – we serve apple slices or ask students to bring an approved choice. We favor the use of school vans to transport students.

Economics – the major expenses are (1) the building lease which here is about \$1.40 NZ per square foot per month so 2500 square feet = \$3500 NZ or \$16 NZ per square meter (2) salaries and benefits for teachers and aides. In the US we pay teachers a base

salary of \$7000 NZ per month plus health insurance. We pay aides a base salary salary of \$4000 NZ per month with health insurance if more than 30 hours are worked per week. A typical workload is three 2 hour long classes with 16 students each and supported by 4 or more aides. The teacher living above the school in a mixed-use building has proved optimal for us.

Education - Teachers and aides learn the same curriculum as the students with the additional burden of having to learn how to teach the material. The specialization of Adapted Physical Education has largely been abandoned in the United States. We do not find most of the techniques and tactics taught in collegiate special education programs to be useful or relevant, so usually our teachers work as what are known as Subject Matter Experts. We strongly encourage teachers to get doctoral degrees. **In our experience it has been straightforward to teach someone with no martial arts experience but with a good heart how to teach the technical aspects of Tai Chi Chuan.**

Tuition – We charge \$300 NZ per month for tuition and suggest a floating reserve of \$75 NZ per month for the student to purchase clothing, weapons, tools and so on. Note that in the United States the tuition is almost never paid by parents, but rather by a variety of public agencies ranging from local school districts to states.

Technology – We would prefer clothing, weapons, and tools be made in New Zealand. The clothing includes wrist-based bio-sensors for blood pressure, heart rate and temperature for seizure and overheating amelioration; pressure sensors in floor mats and chair seats, location (x y z) sensors in clothing and accelerometers in head gear. Our filming utilizes multiple cameras. Our SAITO software runs on Windows and has 220,000 lines of code and 520 Windows forms. It is intentionally very difficult to obtain email addresses, names or street address from SAITO's databases.

Challenges – [1] access to Traditional Chinese Medicine practitioners for supplementary diagnoses and recommendations about individual homework and [2] the legalities about visas for residents and touring grandmasters [3] We know nothing about employer responsibilities in New Zealand as far as taxes, payroll and accounting requirements [4] Importing weapons, clothing and electronics.

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a fair amount of material can be seen at our rather sprawling web site at www.silverwolfwushu.com. There is a special New Zealand section under Investors.