



陳秀蘭醫生  
Dr. Helen Chan

## 科研奮不停 眼疾病童見光明

現今世上有好些奇特罕見的疾病，往往要經過醫學界長時間的研究和試驗，才能找到有效的治療，而陳秀蘭醫生正是一位30多年來一直專門研究一種罕見兒童眼科癌症的病學家。自從走進實驗室，便決心要找到治癒此病的方法，終於作出了突破性的發現，繼而從實驗室走進世界，致力把治療方法帶進世界每一個角落，讓瀕臨黑暗世界的兒童，有望走上光明視界。

陳秀蘭醫生是多倫多病童醫院國際著名的兒童臨床腫瘤學家，也是多倫多大學兒科教授，自從1971年醫科畢業後，選上兒童血液和癌症這一科，便一直沒有停下來。過往幾年，她的成就更先後獲得安省勳章（2010年）及英女王鑽禧紀念獎章（2012年）的表揚，成為華裔之光。

坐下來接受訪問之際，陳醫生自言今年進入“退休”狀態，一聽之下感到有點意外，再聽下去，原來她要用這一年的時間完成在臨床方面的事務，收拾心情，專心繼續在研究方面的工作。說這話時，那平靜而肯定的語調底下，流露一種決心，而這份決心，也正是她30多年來一直奮力向前，廢寢忘餐，把寶貴光陰花在實驗室的原動力。

跟科研界的人士攀談，每每被諸多醫學化學生物學等名詞所難倒，猶如摸索另一種語言；然而，這也叫人想到，他們也仿如活在另一個世界、抱有另一種眼界，要走的路，不論是自選還是被選，本就是一個活的傳奇。

### 從心靈世界到科研天地

問陳醫生為何會選上醫科，她說小時候的夢想是當一位圖書館管理員，皆因她自小愛閱讀，只想浸淫書海中。然而，她母親開啟了她的眼睛，在一個“女子無才便是德”的年代，決心要當一位護士，並且考進香港首間訓練護士的那打素護士學校。這份排除萬難、勇往直前的決心，就在陳秀蘭的心中植根。

自小在香港名校女拔萃書院就讀的陳秀蘭，在寫作方面的成績尤為突出；到高級程度會考時生物科拿了個優等，並且獲香港大學取錄，也就順理成章地選讀了醫科。1971年畢業後，即被伊利沙伯醫院聘用為實習醫生，而且成為首位晉身兒科的女醫生；要知道那年代的醫院，兒科本是不收女生的，這也可說是陳秀蘭作出的人生第一個突破。

在香港任職兩年，她開始萌生出國的念頭，於是開始寫信申請美國的醫院。可是當時美國對非公民的申請有所限制，她一連寫了60多封信，終於被美國田納西著名的聖裘德兒童研究醫院取錄，開始在兒童血液和癌症方面的臨床訓練和研究。聖裘德醫院在栽培發展中國家的醫護人員方面，堪稱是先驅，陳秀蘭也認定了這種普世心懷，作為她研究的目標和理想。在醫院的支持下，她初嘗“實驗室人生”的滋味，並且在三年的駐院日子中，完成了一項研究計劃和五篇論文。

1976年，陳秀蘭正在為研究之路尋找新去向，於是從美國移民到加拿大，並隨即加入瑪格烈公主醫院和病童醫院參與兒童血液和癌症研究工作。1979年，她轉到多倫多大學的病童醫院，擔任兒童臨床腫瘤學家，並且開始專攻視網膜細胞癌症的

臨床研究。

她坦言那段日子，幾乎連睡覺的時間也沒有；既要看病，又要做研究，加上兒科醫生只有幾人，令她疲於奔命；而她的意向，乃是專注於研究，走進實驗室，把病症的因由與療法逐一拆解。

### 遇上罕見病 遇上貴人、同路人

要認識陳醫生的工作與成就，必得先認識她所研究的對象——視網膜母細胞瘤。這是一種罕見的眼部惡性腫瘤，起源於胚胎期視網膜細胞的病變而導致。多數案例於兩歲前被驗出及確診；患者大部分為無家族史的偶發性個案，但有約半數與家族遺傳相關，其致病基因是染色體基因出了問題；基因的變異，使視網膜細胞生長的複製行為失去控制而產生腫瘤。

視網膜母細胞瘤的治療需視腫瘤侵襲範圍、分期、視力殘存程度及是否擴散轉移而定。若是視力受到嚴重損害或完全受損，且腫瘤體積過大，需進行外科手術去除腫瘤，也就是把整個眼球移除。

正如治療任何癌症一樣，最常用的療法是手術、化療，再輔以放射性治療，可是由於單靠化療往往起不了作用，須採用放射性療法，但卻可能引發其他癌症。至於手術，雖然是最有效，卻需要把眼球移除，令病童從此失明。

陳醫生在研究中發現了導致化療不起作用的原因是一種蛋白，並找到了克服這個問題的藥物。如今，患這種病的兒童90%以上都可以通過化療得到治癒，而陳醫生也成為世界聞名

的眼癌專家。

陳醫生說她在人生路上遇到好些“貴人”；許是良師，或是益友，都給她支持和幫助，甚至成為合作的伙伴；其中一位，是她初到瑪格烈公主醫院當值便遇上的Dr. Brenda Gallie，兩人都是當時研究視網膜母細胞瘤的專家，一見如故，其後更合作發展針對此病的研究及臨床試驗計劃。

1980年代，陳秀蘭又遇上當時在癌症研究領域上名字響噹噹，並且領導研究工作的林重慶博士（2014紅楓傳奇得獎者）。她主動提出與林博士見面，力陳兒科腫瘤細胞對癌症研究工作的作用和重要性，結果說服了林博士幫她一把，繼而更與她合力推展研究。其中一個令她鼓舞的成果，是獲得國家癌症研究學院首個研究資助撥款。

其後，她推動及引領全球醫學界重新採用化療，使化療由先前居於第二線治療的地位，提升為第一線，務求以最低毒性的化學藥物、最少的有效劑量、最短的療程，達到殲滅腫瘤細胞的目的。

2004年，她領導首個國際性持續臨床試驗計劃，擔任首席研究員；成員來自多倫多、溫哥華、滿地可、新加坡、印度及智利。在多國團隊的努力研究、多方嘗試下，以化學治療為主的治療策略漸露曙光。

#### 回歸心靈 延伸視野

回看過去30多年的日子，陳醫生從未後悔把全副精神，甚至吃飯睡覺的時間都花在不見天日的實驗室；問她精力何

來，她說只要想到有一天獲得成果，便毫不困倦、永不放棄。

對於這種從未停止鑽研過的科研生活，有人會想一定有孤單或痛苦的時候；然而，“子非魚焉知魚之樂？”陳醫生只問眼前的挑戰，不問背後的辛酸，樂在其中。

2010年獲頒安省勳章，以及2012年獲女王鑽禧紀念獎章，陳醫生不諱言這是對她30年來堅持不懈研究所得成果的肯定。她還鼓勵加拿大的移民說：“雖然是移民，同樣有機會發展、選擇自己喜歡的職業、並且取得成就，對加拿大有所貢獻。最重要是再接再厲；失敗了就重新再來，繼續努力。”

時至今日，她的工作還要繼續下去，而且要擴展至全球各地，尤其是發展中的國家，例如非洲肯亞，因為那是最缺乏醫療設備的地區，醫療人員也極需要協助和汲取專業知識。因此她每年都與Dr. Brenda Gallie前往肯亞等地，親身參與當地研究、交流及教育工作。

處身在加拿大，她又推展全加對視網膜母細胞瘤的認識，以及為病童和家人提供指引、輔導及支援，幫助他們調適生活，並教導他們如何減低腫瘤復發或變異的風險。此外，亦參與和視網膜母細胞瘤有關的籌款活動，例如“失明之夜(Blind Ball)。

在訪談的末段，陳秀蘭還提及了她的個人興趣；原來她熱愛從事各種藝術，包括油畫、石板畫、木刻、石刻等等；都是需要花時間、心思和耐性去鑽研的藝術。當然，也少不了一對好眼睛，能夠察看和欣賞人間美事。



獲安省省督David C. Onley頒發安省勳章（2010）  
Received the Order Of Ontario in 2010 from Lieutenant Governor of Ontario  
The Honourable David C. Onley.



與Dr. Brenda Gallie 及視網膜母細胞瘤康復者  
Sarah Slingsby  
With Dr. Brenda Gallie and retinoblastoma survivor  
Sarah Slingsby



近日愛上遠足（2015）  
A recent hobby: hiking



在工作中  
At work



與Dr. Brenda Gallie 一起出席活動  
With Dr. Brenda Gallie at a party



油畫作品：In Memory of Turner's Venice（1979）  
Oil Painting: In Memory of Turner's Venice



與研究伙伴Dr. Brenda Gallie 一起在  
佛羅倫斯參加會議  
With Retinoblastoma Research Collaborator  
Dr. Brenda Gallie



木刻作品：A Lady in the Kukkut Aasan  
Yoga Position（2007）  
Butternut Carving: "A Lady in the Kukkut  
Aasan Yoga Position"

## Dr. Helen Chan

*There are a few rare and unusual diseases in the world, and often only after a long period of research and experimentation can an effective cure be found. Among medical researchers, there is a Chinese Canadian cancer specialist, Dr. Helen Chan, who has spent her whole life focused on a rare kind of childhood eye cancer. Since she walked into a laboratory over thirty years ago, she had been determined to find an effective treatment for retinoblastoma, and finally had breakthrough success. Now she wants to bring this treatment to every corner of the world, and let those children on the brink of darkness grow up in a bright world.*

Dr. Helen Chan is a Professor of Pediatrics at the University of Toronto and an Associate Senior Scientist in the Research Institute at Toronto's Hospital for Sick Children. Since graduating from medical school in 1971 when she chose to specialize in Pediatric Hematology/Oncology, there has been no stopping her. In the past few years, she received the Order of Ontario (2010) and the Queen's Diamond Jubilee Medal (2012) for her accomplishments. She is one of the bright lights in the Chinese-Canadian Community.

Helen says she is entering 'retirement' this year. One would be surprised to hear this, but in fact she needs this year to complete her clinical work, and then she plans to focus more on her research. Beneath her calm and positive demeanor, she demonstrates determination, the driving force within her in the last thirty years to spend all her time in the laboratory, often foregoing much needed sleep or food.

When one chats with people from the scientific research community,

one can be stumped by all those medical or biological terms, just as if they were speaking another language. That leads us to think that they seem to live in another world, with a totally different perspective. Their way of life, whether by choice or not, could be a legend in itself.

When Helen was asked why she chose to go into medicine, she said her dream originally was to become a librarian. She had always loved books since she was young and wanted to be surrounded by a sea of books. However, her mother's determination opened her eyes. At a time when 'a woman's virtue' was to know and understand nothing, Helen's mother decided to be a nurse, and was admitted into the first nurse training school in Hong Kong. Her mother's courageous determination to go forward despite all odds was rooted very early on in Helen's heart.

Helen was educated in an elite school, the Diocesan Girls' School, in Hong Kong. She was outstanding in writing. Awarded a Distinction in Biology in her matriculation year, she was admitted into the University of Hong Kong's Medical School. After graduating in 1971, she interned at Queen Elizabeth Hospital, and trained in the Department of Pediatrics.

After working two years in Hong Kong, Helen was attracted by the idea of studying abroad. She began applying to different US hospitals, but at that time there were limitations on applications from foreign doctors. Helen sent off more than sixty applications, and she was finally accepted by St. Jude Children's Research Hospital in Memphis, Tennessee, where she completed her Pediatrics residency and started her Pediatric Hematology/Oncology fellowship. She was supported by the hospital in her first taste of basic laboratory research. In her three years at the hospital, she completed one laboratory research project and published five research papers. The head of the hospital was keen on training doctors from less developed countries. Helen shares this ideal,

and it has always been her goal to help others worldwide.

In 1976, Helen looked for a new direction in her training and research. She came to Canada and continued her Pediatric Hematology/Oncology fellowship at Princess Margaret Hospital and the Hospital for Sick Children. In 1979, she joined the staff of the Hospital for Sick Children as a Pediatric Hematologist/Oncologist, and started her clinical and basic research in retinoblastoma, specializing in this rare form of cancer in young children.

She says frankly that in those days there was never enough time for sleep. She had to attend to her clinical practice, and do research on retinoblastoma at the same time. With only a few Pediatric Hematologists/Oncologists on staff, she was exhausted almost all the time. She was determined to stay focused on research, and find an effective treatment for this devastating disease.

To understand the work and achievements of Helen, one must first understand the disease she studied: retinoblastoma. This form of cancer originates as a mutation of retinal cells in a baby, sometimes before birth. Most children are diagnosed before two years of age, and most of them have no family history of this disease, but in about half of the children, the disease is hereditary, which means that they can pass the disease to their children. Most children with hereditary retinoblastoma have both eyes involved by cancer. The disease starts with a mutated gene on the thirteenth chromosome, which results in uncontrolled growth of the retinal cell to form a cancer.

Treatment of retinoblastoma depends on what stage the cancer is at, how far it has spread, and the amount of residual vision. If the child's vision is severely damaged or totally damaged, and the cancer is very large, then surgery is needed to remove the cancer, which means

removing the entire eyeball.

As with all cancers, treatment options include surgery in combination with chemotherapy and/or radiation. However, chemotherapy alone is not usually completely effective for retinoblastoma. Radiation can be used, but in years to come, radiation will most likely result in another different type of radiation-induced cancer in those with hereditary retinoblastoma. Surgery is the most effective treatment but children with retinoblastoma involving both eyes will be left totally blind.

Helen says that she has been fortunate in her life in that she has always found mentors and friends who would help her and become partners in her research work. She encountered Dr. Brenda Gallie, almost on the first day at work at Princess Margaret Hospital. Dr. Gallie was already a retinoblastoma expert at that time and the two hit it off right away, becoming close friends and partners in research and clinical trial programs for the disease.

In the 1980s, Helen also had the good fortune to meet up with Dr. Victor Ling (Chinese Canadian Legend 2014 Award Recipient), who is world-famous for discovering P-glycoprotein, the molecule responsible for multidrug resistance. In their meeting, she convinced him of the importance of doing research and clinical trials of his discovery on cancer cells in children, since childhood cancers are primarily treated with chemotherapy. At the end of the over two hour discussion, Dr. Ling not only offered to help her with her research, but also to co-author her research papers, allowing her to get her first grant from the National Cancer Institute of Canada.

Applying Dr. Ling's basic research, Helen was able to find that P-glycoprotein-induced multidrug resistance is responsible for treatment failing in retinoblastoma and other types of childhood cancers. Helen

also found a way to overcome multidrug resistance in the cancer cells, making chemotherapy treatment for retinoblastoma more effective. At the same time, Dr. Gallie developed a molecular test that diagnoses the presence of the retinoblastoma-causing gene while babies are still in the womb, allowing infants to be treated much earlier. Today, more than 90% of children with retinoblastoma can be cured and their eyesight preserved. Helen has become a world-renowned expert on retinoblastoma.

In 2004, she led the first international clinical trial program for retinoblastoma, with researchers from Toronto, Vancouver, Montreal, Singapore, India and Chile. Their multinational efforts demonstrate that a chemotherapy-based treatment strategy is the right way to go for retinoblastoma.

Looking back at the past 30 years, Helen does not regret that she has spent so much time and energy in the laboratory, often skipping meals and sleep, and not seeing the light of day. When she is asked how she managed to do it, she says she is focused on getting results. As long as she thinks her work will bear fruit down the road, she is energized and she will not give up.

Some people might think that there must have been lonely or painful moments in this life of doing meticulous research day after day. However, how would we know unless we were in her shoes? Helen is actually happy meeting the challenges ahead and she does not fear tackling problems or issues.

In 2010, Helen was awarded the Order of Ontario, and in 2012, the Queen's Diamond Jubilee Medal. This recognition is for her thirty years of relentless research in retinoblastoma.

She encourages Canada's newcomers, "Although we are immigrants, we have the same opportunities to develop ourselves, to choose our profession, be successful, and make our contributions to Canada. The most important thing is to redouble our efforts when we fail, so that we can continue to push ahead, and start again."

Today, her work will indeed continue, and also extend to the rest of the world, especially less developed countries like Kenya. Since these countries lack both medical equipment and medical expertise, they need assistance badly. Helen goes with Dr. Gallie to Kenya to teach the new strategies to combat retinoblastoma, and participate in local research, communication and education.

In Canada, Helen pushes forward with national awareness of retinoblastoma, and provides guidance for the children and their families, counseling and supporting them, as well as teaching them how to reduce the risks of cancer for themselves and their children. She participates in retinoblastoma fundraisers such as the Blind Ball.

Towards the end of the interview, Helen mentions her personal interests. She finds time to hike every day with friends. She loves creating a variety of artwork, including painting, lithography, woodworking, woodcarving and stone carving. It takes a lot of time, insight, and patience to create works of art. Art in itself is highly relaxing and therapeutic, and of course, having a pair of good eyes allows us to observe and be truly thankful for all the good things in life.